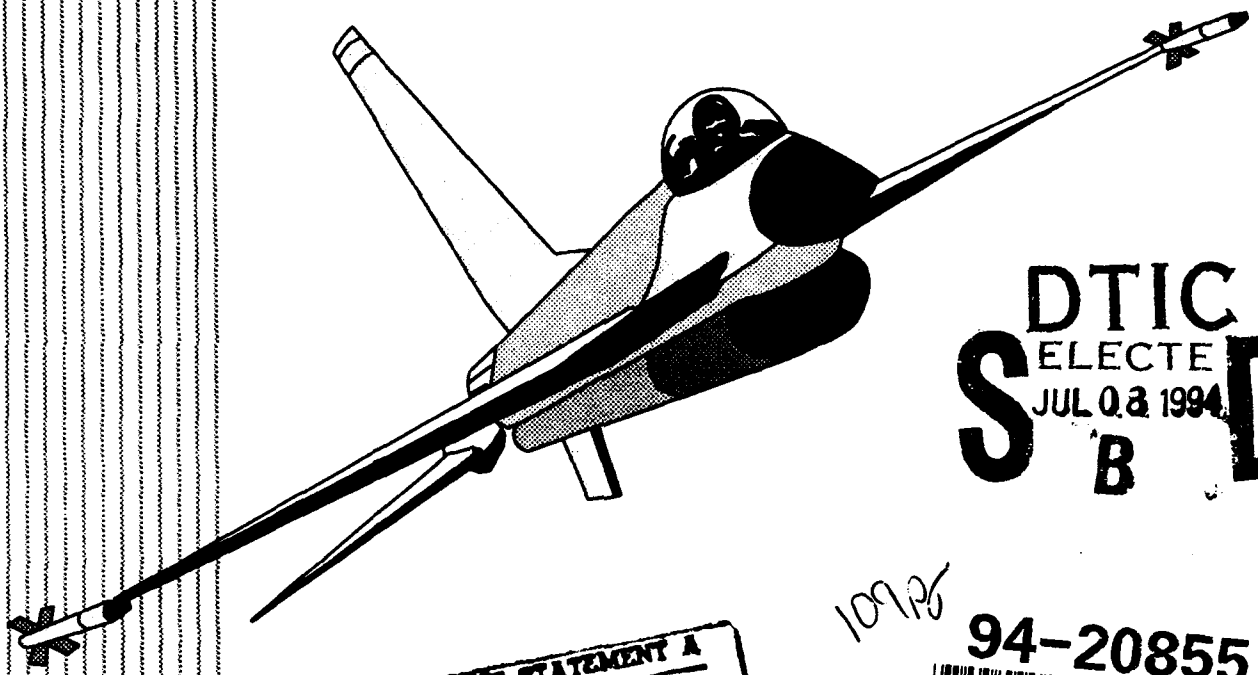
Environmental Assessment for Conversion of the 926th Fighter Group at Naval Air Station New Orleans, Louisiana



DEPARTMENT OF THE AIR FORCE
Headquarters, Air Force Reserve
Robins Air Force Base, Georgia

July 1992

ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFRES	*Air Force Reserve*
AICUZ	Air Installation Compatible Use Zone
BOE	Bureau of Explosives
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CO	Carbon monoxide
dB	Decibels
DNL	Day-night average sound level
DOD	Department of Defense
EA	Environmental Assessment
FG	Fighter Group
FONSI	Finding of No Significant Impact
FS	Fighter Squadron
HAPS	High accident potentials
HC	Hydrocarbon
H-70	Fuel mixture of 70 percent hydrazine and 30 percent water
IR	Instrument route
IRP	Installation Restoration Program
JP-5	Jet fuel
L_{dnmr}	Day-night average sound level metric
MGD	Million gallons per day
MSA	Metropolitan statistical area
MTR	Military Training Route
NACIP	Navy Assessment and Control of Installation Pollutants
NAS	Naval Air Station
NEPA	National Environmental Policy Act
NO_x	Nitrogen Dioxide
PSD	Prevention of significant deterioration
SEL	Sound Exposure Level
SO_x	Sulfur Dioxide
$\mu g/m^3$	Micrograms per cubic meter
U.S.	United States
VR	Visual route

COVER SHEET

ENVIRONMENTAL ASSESSMENT
AIRCRAFT CONVERSION, 926TH FIGHTER GROUP
AIR FORCE RESERVE FACILITY,
NAVAL AIR STATION NEW ORLEANS, LOUISIANA

a. Responsible Agency: Department of the Air Force.

b. Cooperating Agency: Department of the Navy.

c. Proposed Action: Aircraft Conversion, for the 926th Air Force Reserve, Naval Air Station New Orleans, Louisiana.

d. Written comments and inquiries regarding this document should be directed to: Toni Thorne, HQ AFRES/CEPV, Robins Air Force Base, Georgia, 31098-6001, (912) 327-1073.

e. Report Designation: Environmental Assessment.

f. Abstract: The U.S. Air Force continues to modernize Air Force Reserve (AFRES) units by replacing existing aircraft with newer models; this is referred to as an aircraft conversion. This environmental assessment (EA) analyzes the potential impacts from aircraft conversion within Naval Air Station (NAS) New Orleans, Louisiana. The primary objective of the conversion is to comply with the Department of Defense Total Force Structure by replacing older aircraft with more modern ones. At NAS New Orleans, the 926th AFRES Fighter Group and Headquarters AFRES proposes to replace 18 A-10 aircraft with 18 F-16 C/D aircraft in fiscal year 1993. To support this aircraft conversion the AFRES is planning construction of 5 new buildings, a sound suppressor pad, and modification of 6 existing facilities. Construction activities for the Proposed Action would take place in previously disturbed areas, except for 0.4 of an acre. This action would also include the use of 4 existing military training routes in the states of Alabama, Louisiana, and Mississippi. The only alternative to the Proposed Action considered was the No-Action Alternative. This EA analyzes potential impacts from proposed activities on air quality, airspace, biological resources, cultural resources, health and safety, hazardous materials/waste management, infrastructure, land use, noise, socioeconomics, and water resources. No significant impact to these resources would occur from the proposed conversion.

SUMMARY

This Environmental Assessment (EA) has been prepared to analyze the environmental consequences associated with the aircraft conversion of the 926th Fighter Group (FG), Air Force Reserve (AFRES) at Naval Air Station (NAS) New Orleans, Louisiana, from A-10 aircraft to F-16 C/D aircraft, in compliance with the National Environmental Policy Act (NEPA) and the regulations of the President's Council on Environmental Quality for NEPA compliance, and Air Force Regulation 19-2, which implements these laws and regulations. Section 1.0, Purpose and Need for the Action, presents the purpose and need, the scoping process for the EA, and applicable regulatory compliance and coordination. Section 2.0, Description of the Proposed Action and alternatives, describes the project in detail, addresses alternatives, and summarizes project impacts and mitigation measures. Section 3.0, Affected Environment, provides a description of the potentially affected physical and human environments. Section 4.0, Environmental Consequences, describes the potential impacts of implementing the Proposed Action and alternatives and any mitigation measures required.

The U.S. Air Force continues to modernize AFRES units by replacing existing aircraft with newer models; this is referred to as aircraft conversion. At NAS New Orleans, the 706th Fighter Squadron (FS), one of several squadrons within the 926th FG, is scheduled to replace 18 A-10 aircraft with 18 F-16 C/D aircraft in early fiscal year 1993.

The fighter mission is considered vital to the national defense and must be continued. The primary objective of the Proposed Action is to comply with the Department of Defense Total Force Policy by replacing older aircraft with more modern ones. The specific purpose of this proposed conversion is to modernize the equipment of the AFRES at NAS New Orleans and to upgrade the potential contribution of the 706th FS to the national defense posture.

The aircraft conversion would require construction of 5 new buildings, a sound suppressor pad, and modification of 6 existing facilities. New construction would take place on a concrete aircraft parking apron or a previously disturbed grass field, except for a munitions storage facility which would be constructed in an undisturbed forested area. In addition, the action would increase the use of four existing military training routes (MTRs) from current levels (visual routes 179 and 1196 and instrument routes 160 and 161) in the states of Alabama, Louisiana, and Mississippi.

The only alternative to the Proposed Action considered was the No-Action Alternative. This would mean that the 18 A-10 aircraft assigned to the 706th FS would remain in operation at NAS New Orleans. Additional

conversion location alternatives were considered but eliminated from detailed consideration for a variety of operational constraints.

Summary of Environmental Consequences

Potential impacts to the natural and human environments resulting from the implementation of the Proposed Action would be minor. Impacts would be minimized through project design and/or the adherence to existing federal, state, Air Force, and Navy rules and regulations. Potential impacts to the natural and human environments assessed in this EA at NAS New Orleans are related to air quality, airspace, biological resources, cultural resources, health and safety, hazardous materials/waste management, infrastructure, land use, noise, socioeconomics, and water resources. For MTRs potential impacts were related to air quality, airspace, biological resources, health and safety, land use, noise, and water resources. A brief summary of these resources is presented below.

Air Quality

NAS New Orleans. Implementation of the Proposed Action would result in lower total emissions of air pollutants than from the current A-10 activities. Therefore, negative impacts to air quality are not expected.

Military Training Routes. Air pollutants along the length of the MTRs would increase from the Proposed Action. However, levels would not change the status of air quality in the region which is below National Ambient Air Quality Standards. Therefore, no significant impacts to air quality from MTR use would occur.

Airspace

There would be no significant change to airspace management or use from implementation of the Proposed Action.

Biological Resources

NAS New Orleans. Implementation of the Proposed Action would reduce habitat available to biological species on NAS New Orleans by 0.2 percent. Except for the American alligator, which has been recently reclassified from "Threatened" to "Threatened by Similarity of Appearance", no federally or state-listed threatened or endangered species occur on the station. The American alligator would not be affected by the Proposed Action. Therefore, no significant impacts to biological resources would be expected.

Military Training Routes. The Proposed Action would increase noise and visual disturbances to biological species along the MTRs. In addition, the potential for bird/aircraft strike would increase during times of the day and

year when bird flight activity is high (e.g., migratory season). However, aircraft flight would occur at altitudes where noise levels would not significantly effect biological species. In addition, it is standard Air Force policy to avoid bird/aircraft strikes by not flying at certain altitudes, times of day/year or in airspace where anticipated bird migration is thought to be concentrated; therefore, no significant impacts to biological species would occur.

Cultural Resources

NAS New Orleans contains no known cultural resources; however, a slight potential to encounter resources during construction activities does exist. If any cultural resources are encountered during construction, work would stop immediately and the station's Historic Preservation Coordinator would be consulted before construction work would be allowed to proceed. Therefore, no impacts to cultural resources would occur.

Health and Safety

NAS New Orleans. As part of the Proposed Action, a propellant, H-70, would be used at NAS New Orleans. In the unlikely event of a spill, H-70 could present a potential health impact if it is inhaled or comes into contact with body tissue. The control of potential impacts would be based on established procedures and equipment specified by Air Force Occupational Safety and Health, Navy, and federal Occupational Safety and Health Administration regulations. Additional health and safety impacts could occur if construction personnel come into contact with asbestos. To avoid impacts to workers, buildings to be modified would be surveyed, and any asbestos which could not be avoided would be removed and disposed by a certified asbestos contractor prior to the start of building modification. Overall, no significant health and safety impacts are expected.

Military Training Routes. From implementation of the Proposed Action there is a remote potential for increased flare-induced forest fires and bird-aircraft strike hazards. However, the infrequent use of flares (20 a year on visual route 179) and special precautions such as increasing the altitude of flare release during dry periods and avoiding low level flight over bird sensitive areas would reduce these impacts. The Proposed Action would not increase the potential for mid-air collision on these routes. Therefore, no significant impacts to health and safety from MTR use would occur.

Hazardous Materials/Waste Management

The types and volumes of hazardous materials/waste expected from the Proposed Action would be similar to those associated with current AFRES operations except for the use of H-70 as a propellant which has not been used at NAS New Orleans. However, the use of H-70 would be limited and

would be incorporated into appropriate station spill and waste management plans. Hazardous waste and materials generated during construction would be cleaned up and disposed by the construction contractor pursuant to applicable state and federal laws on hazardous waste management. Therefore, no significant impacts would occur to hazardous materials/waste management at NAS New Orleans.

Infrastructure

Current infrastructure is adequate to handle the proposed facilities and temporary construction personnel at NAS New Orleans. In addition, after the conversion there would be a reduction in AFRES personnel using the station's infrastructure. Therefore, impacts to infrastructure would not be expected.

Land Use

NAS New Orleans. The proposed conversion would increase noise levels within the area northeast of NAS New Orleans. The off-base acreage exposed to noise levels greater than 65 decibels (dB) would increase by approximately 4 percent in mostly undeveloped areas around Belle Chasse, and therefore, would not change land use because of noise incompatibility. Land use on the station would not be affected by the Proposed Action.

Military Training Routes. Increased noise levels from use of the MTRs would not result in any change to land use; therefore, no significant impacts would occur.

Noise

NAS New Orleans. Noise levels would increase in the area of NAS New Orleans. However, comparison of baseline noise contours with the Proposed Action shows little variance (minor increases). Therefore, no significant impacts to the noise environment would be expected.

Military Training Routes. Noise levels on VR-179 would increase from 50 dB to 52 dB and on VR-1196 from 46 dB to 48 dB. However, these noise levels are below applicable land use compatibility guidelines. Therefore, no significant impacts would occur to the noise environment from use of the MTRs.

Socioeconomics

The conversion would reduce part-time (weekends and two weeks a year) reservists by 247 personnel (24 percent) and increase full-time reservists by 8 personnel (2 percent). The reduction in part-time reservists personnel is even less when converted to full-time equivalents of 30 to 35. Because the

decrease in personnel would be small in comparison to the large population of the New Orleans area, any impact to the local economy would be negligible and short-term. Construction activities would provide some short-term economic benefit to the local community.

Water Resources

NAS New Orleans. Standard erosion control measures would be implemented during construction to avoid soil runoff into the local water system. Hazardous waste spills and materials from construction and operations would be cleaned up, placed in containers, and disposed in accordance with NAS New Orleans guidelines to prevent impacts to water resources. In addition, waste from aircraft wash down would be directed to the sanitary sewer system and would not come in contact with local water resources. If the aqueous fire fighting foam system is used it would be contained and disposed and would not impact water resources. Therefore, significant impacts to water resources would not be expected.

Military Training Routes. There is a slight potential for increased soil erosion and thus stream turbidity from loss of vegetation which could potentially be caused by flare induced fires on visual route 179. However, the potential for fires is low because flares would be infrequently used, and the altitude of release would allow for complete burning before ground contact. Therefore, no significant impacts to water resources would occur from the proposed use of the MTRs.

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1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations implementing the Act (40 Code of Federal Regulations [CFR] 1500-1508), Department of Defense (DOD) Directive 6050.1, and Air Force Regulation 19-2, which implements these laws and regulations, direct that DOD and U.S. Air Force officials consider environmental consequences when authorizing or approving federal actions. Accordingly, this Environmental Assessment (EA) analyzes the potential environmental consequences of the proposed Aircraft Conversion Program for the Air Force Reserve (AFRES) at Naval Air Station (NAS) New Orleans (Figures 1-1 and 1-2).

1.1 PURPOSE AND NEED

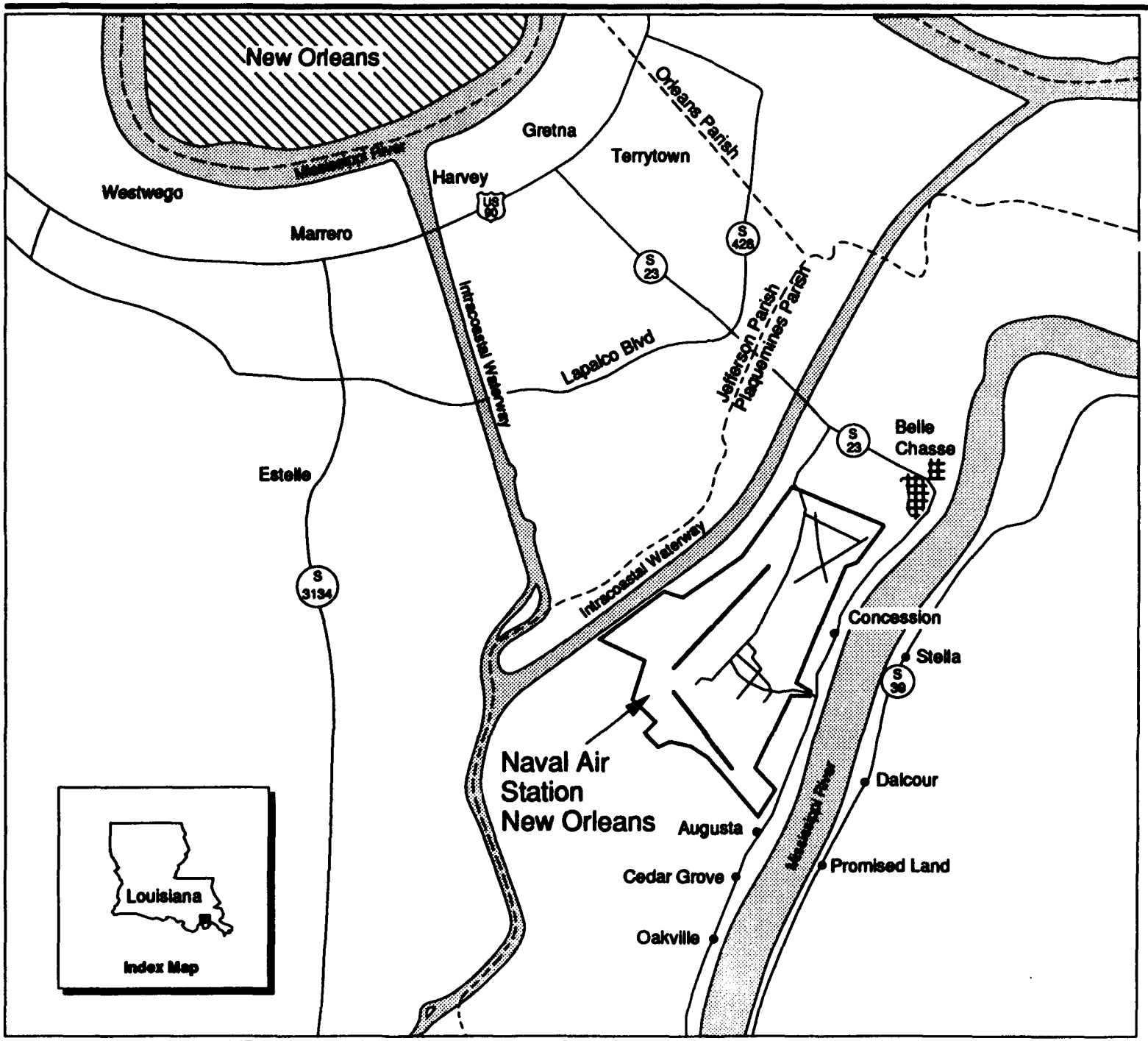
The U.S. Air Force continues to modernize AFRES units by replacing existing aircraft with newer models; this activity is referred to as an aircraft conversion. At NAS New Orleans, the 706th Fighter Squadron (FS), one of several squadrons within the 926th Fighter Group (FG), and Headquarters AFRES proposes to replace A-10 aircraft with F-16 C/D aircraft in early fiscal year 1993.

The fighter mission is considered vital to the national defense and must be continued. This priority has been specifically accepted by the National Command Authority through inclusion in annual Presidential budget submissions and has been confirmed by Congress.

The primary objective of the Proposed Action is to comply with the DOD Total Force Policy by replacing older aircraft with more modern aircraft. This policy is intended to ensure that both AFRES and Air National Guard units are equipped with aircraft fully capable of meeting current rigorous combat demands in the pursuit of national security. The Proposed Action addressed in this document is the replacement of 18 A-10 aircraft, currently assigned to the 706th FS, with 18 F-16 aircraft. The specific purpose of this proposed conversion is to modernize the equipment of the AFRES at NAS New Orleans.

1.2 SCOPE OF THE ENVIRONMENTAL REVIEW

This EA describes the Proposed Action and alternatives and addresses their potential for adverse environmental effects, including those directly associated with the aircraft conversion with its construction and changes to operation at NAS New Orleans and those from proposed use of military training routes (MTRs) by the 926th FG in the states of Alabama, Louisiana, and Mississippi. Where appropriate, mitigation measures are suggested to



Vicinity Location Map

Naval Air Station
New Orleans,
Louisiana

EXPLANATION

Base Boundary

Parish Boundary

0 1 2 4 mi

Figure 1-1

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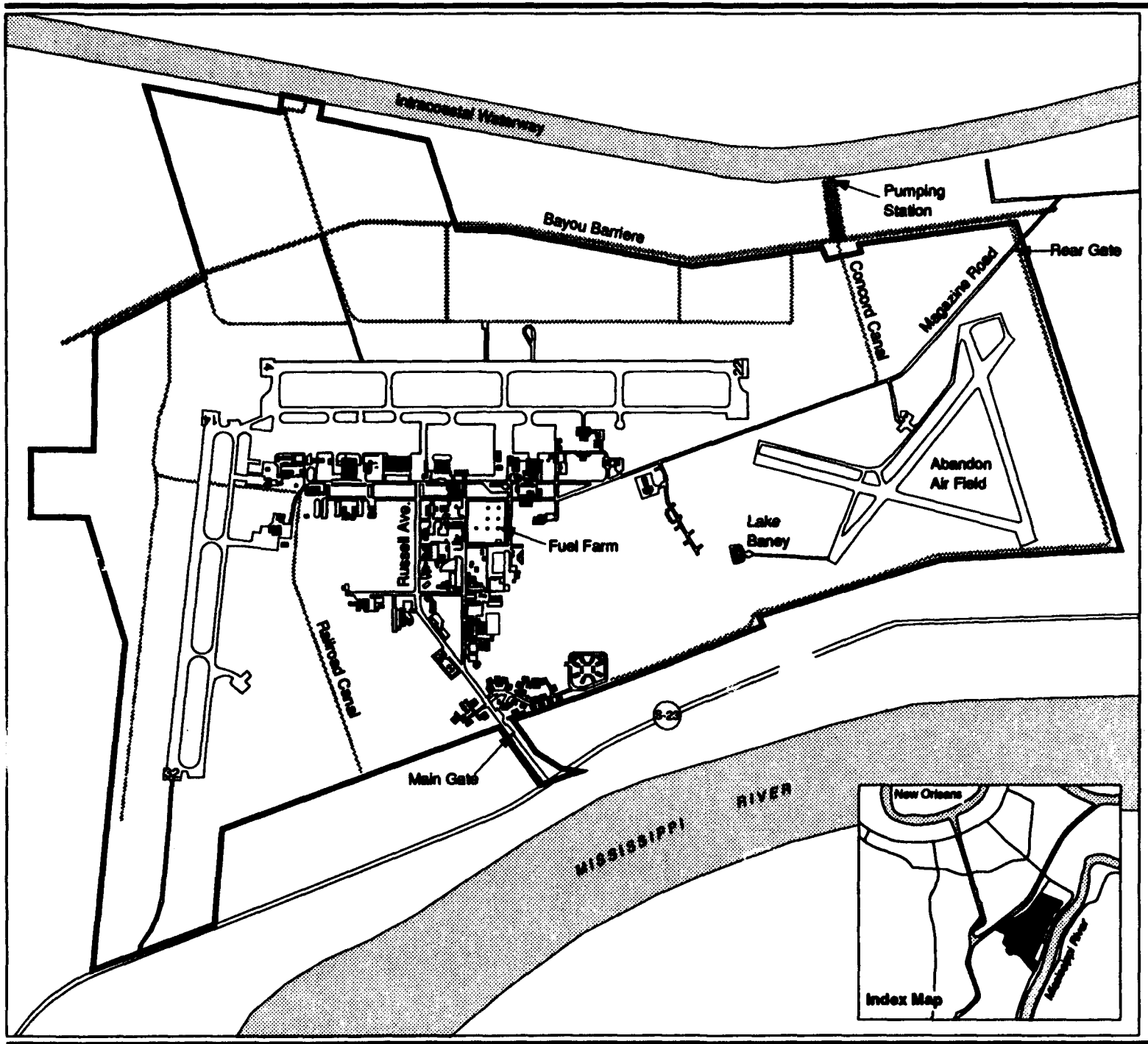

Station Map

Naval Air Station
New Orleans,
Louisiana

EXPLANATION

Base Boundary

Water Canal

0 600 1200 2400 Feet

Figure 1-2

AFR/005-6

reduce or eliminate potential environmental impacts identified as a result of the analysis.

Consistent with Air Force Regulation 19-2 and the CEQ regulations, the scope of analysis presented in this EA is defined by the potential range of environmental impacts that could result from implementation of the Proposed Action or No-Action Alternative. Early evaluation indicated that, because of the scale and design of the Proposed Action and No-Action Alternative, implementation would not result in either short- or long-term impacts to physical resources at NAS New Orleans and cultural resources, hazardous materials/waste management, infrastructure, and socioeconomics associated with the use of the MTRs. The rationale for not addressing these resources in detail is presented in the section that follows. In addition, two of the MTRs proposed for use have been covered by previous environmental documentation and are also discussed below.

Other resources may need to be considered in more detail in order to provide decision makers with sufficient evidence and analysis to determine whether to prepare an environmental impact statement or a finding of no significant impact (FONSI) (40 CFR 1508.9).

The resources analyzed in more detail at NAS New Orleans are: air quality, airspace, biological resources, cultural resources, health and safety, hazardous materials/waste management, infrastructure, land use, noise, socioeconomics, and water resources. Resources analyzed in detail for MTR use are: air quality, airspace, biological resources, health and safety, land use, noise, and water resources. Descriptions of the affected environment, and the potential environmental consequences relative to these resources, are addressed in Sections 3.0 and 4.0, respectively.

1.2.1 NAS New Orleans

Physical Resources. Soils on NAS New Orleans consist of alluvial deposits from the Mississippi River, with the predominant soil type being a silty clay. The majority of the proposed construction would take place on an existing concrete parking apron, or a previously disturbed grass area, except for construction of the Munitions Storage Facility which would take place on approximately 0.4 acre of level, undisturbed forested area. Because of the limited amount of temporary soil disturbance, impacts to physical resources would not be significant.

1.2.2 Military Training Routes

Instrument Routes 160/161. As part of the aircraft conversion, Instrument Routes (IR)-160 and IR-161 in the state of Louisiana would be utilized by the 926th FG. Current use of these routes has been addressed in the Environmental Assessment IFR Training Routes, England Air Force Base,

Louisiana, 1977. This document concluded that no significant impacts would occur to the environment from the use of these routes for subsonic flight training by fighter aircraft. The 926th FG would conduct approximately one sortie per week on these IRs. Currently on IR-160 and IR-161 approximately 2,000 sorties per year on each MTR are being conducted by A-10, A-7, F-15, F-16, F-111, F-4, and T-46 aircraft. Because these IRs are currently being used by F-16, the Proposed Action does not introduce a new element (e.g., aircraft type or maneuvering) to these routes, and represents less than a 3 percent increase in activities; therefore, no significant impacts would occur to any of the environmental components addressed in this EA. In addition, the U.S. Army Engineering District, Memphis, is currently conducting an EA on these routes and this document includes cumulative analysis on the proposed use of IR-160 and IR-161 by the 926th FG.

Cultural Resources. Under the Proposed Action, there would be an increase in subsonic flight operations on visual route (VR)-179 and VR-1196, which could affect certain types of cultural resources (e.g., historic structures or traditional resources) from potential vibrations and audible intrusions. Studies show that noise levels of 120 decibels (dB) must be within 500 feet of a structure to produce vibration damage (U.S. Air Force, 1992). Flight operations on these MTRs would be above 100 feet, however noise levels from F-16 aircraft would be approximately 113 dB at this altitude; therefore, no impacts to historic resources would be expected. Because the MTRs are already being used by F-16 and other military jet aircraft, no impacts to traditional resources are expected to occur.

Hazardous Materials/Waste Management. The use of the MTRs would not generate any hazardous waste; therefore, no impacts would occur.

Infrastructure. Flight activity on the MTRs would not involve the use of infrastructure; therefore, no impacts would occur.

Socioeconomics. The use of the MTRs involve flight activity and would not change population or employment; therefore, no impacts would occur.

1.3 APPLICABLE REGULATORY REQUIREMENTS AND COORDINATION

Federal, state, and regional agencies were contacted regarding regulatory compliance and coordination for construction and aircraft operations for the Proposed Action. It was determined that no federal, state, or regional permits are required to conduct the aircraft conversion.

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2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 DESCRIPTION OF THE PROPOSED ACTION

The AFRES is proposing to convert from the A-10 to the F-16 C/D aircraft for the 706th FS based at NAS New Orleans, Louisiana. The AFRES is also planning new construction projects and building modification activities to support this aircraft conversion.

2.1.1 Characteristics of Aircraft Involved

Manufactured by the General Dynamics Corporation, the F-16 is a compact, multirole, fighter aircraft designed for air-to-air and air-to-surface attack. Powered by one General Electric F110-GE-100 engine with an afterburner; the F-16 generates 25,000 pounds of thrust, has a combat ceiling in excess of 50,000 feet, and a ferry range of more than 2,000 miles. The maximum takeoff weight is 35,400 pounds (General Dynamics, 1989).

2.1.2 Aircraft Operations

If the proposed conversion is carried out, the 18 F-16 aircraft assigned to the 706th FS are expected to increase the number of sorties per year from that of the 18 A-10 aircraft. The F-16 would practice both low approaches and touch-and-go landings. Air traffic patterns would remain consistent with established procedures at NAS New Orleans. Normally aircraft operations for the 706th FS are conducted Tuesday through Friday, with one to two days per month of scheduled weekend flying (Saturday or Sunday). Flying is normally conducted during the daytime (i.e., between 7:00 a.m. and 10:00 p.m.).

The A-10 aircraft assigned to the 706th FS currently fly approximately 2,500 sorties annually. A sortie is defined as one individual flight, which includes a departure, an approach, and possibly one or more closed patterns. Conversion to the F-16 would increase the sortie rate to approximately 3,000 annually (17 percent increase) for the 706th FS. The F-16 would use the same training ranges as those used during A-10 training operations, however would increase the use of specific MTRs as discussed below.

2.1.3 Military Training Routes

As part of the Proposed Action the 926th FG is planning to increase use of MTRs in order to conduct training exercises. Two of the military training routes, VR-179 and VR-1196 (IR-160 and IR-161 are addressed in Section 1.2.2) are located in the states of Alabama, Louisiana, and

Mississippi (Figures 2-1 and 2-2). The 706th FS is planning to conduct approximately 800 sorties a year on VR-179 and 500 sorties a year on VR-1196. The minimum altitude of use by the 706th FS would be 500 feet above ground level at a speed of 450 knots. Special safety precautions to be used by the 706th FS to avoid bird-aircraft strikes in sensitive migratory areas would include increasing the altitude of flight and avoid flying during certain times of day and year when bird flight activity is high.

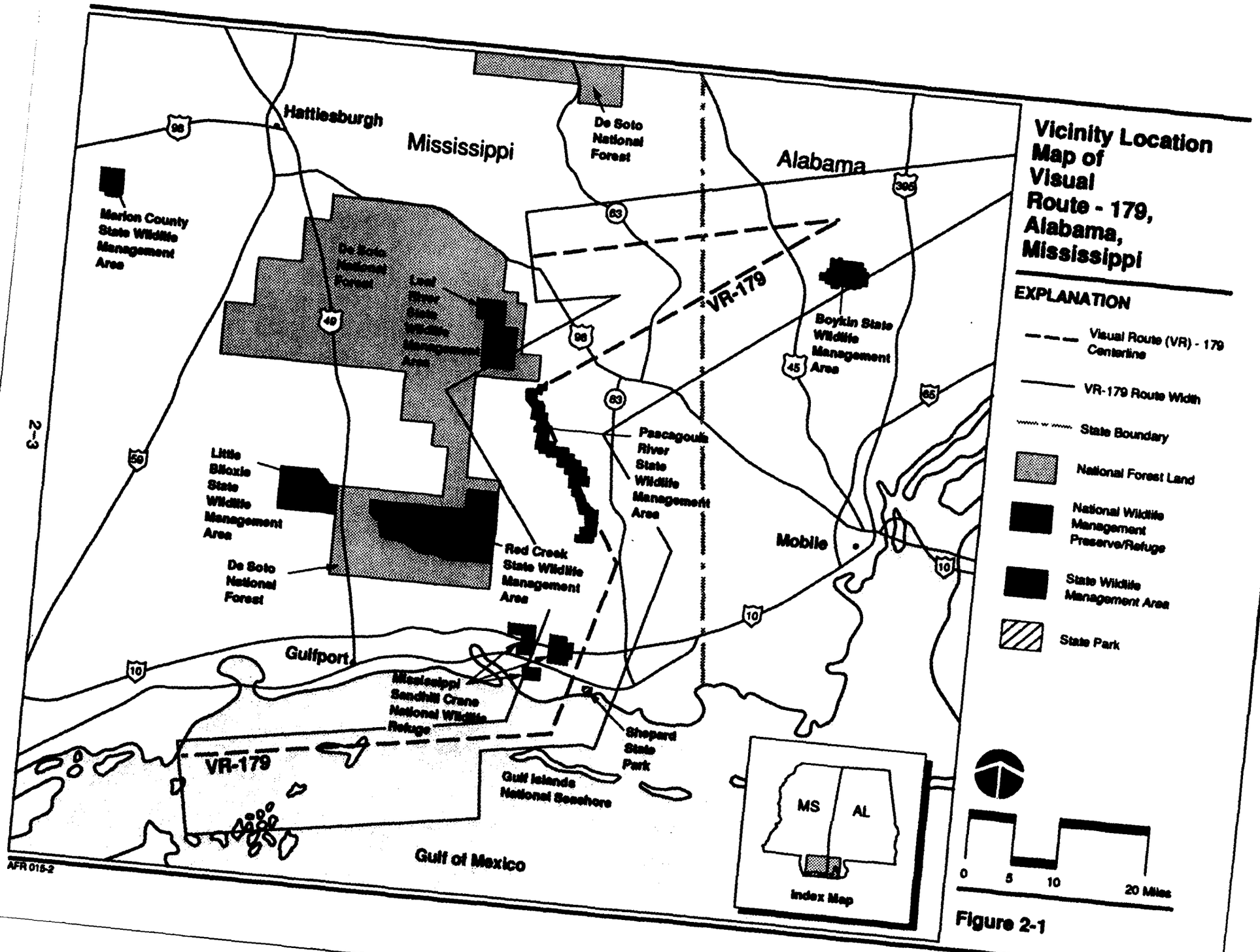
Flare Use. The proposed F-16 aircraft would conduct training exercises on these VRs which would include the use of MJU 7 flares on approximately 20 sorties per year on VR-179 (no flares would be used on VR-1196). Self-protection flares are devices ejected by the aircraft as a means on misleading the guidance systems of heat-sensitive or heat-seeking targeting systems. By providing a more intense heat source than the aircraft engine, the flares become the target rather than the aircraft. No chaff would be used by the 706th FS.

Flares consist of an extruded flare pellet composed of magnesium and Teflon. Standard components of flares are an initiation device (to ignite the flare), a small plastic piston, the flare pellet wrapped in aluminum foil, and a plastic or aluminum endcap. When the flare is expelled from the aircraft the flare begins burning immediately, reaching its highest temperature (1000 degrees Fahrenheit) by the time it passes the tail of the aircraft. The flare pellet is designed to burn completely within approximately 4 to 4.5 seconds after dispensing. During this period, the combustible flare pellet is completely consumed so no burning material contacts the ground. The primary by-products of flare use are magnesium oxide (gaseous) and flare ejection mechanism fragments. Produced by combustion, magnesium oxide occurs only in the immediate vicinity of a burning flare and is dispersed rapidly into the air. Standard altitude of release of the flares to ensure total combustion on government controlled land (e.g., military restricted areas) would be 700 feet above ground level and on nongovernment controlled land along the MTR extra precautions are taken by raising the altitude of release to 2,000 feet above ground level. Extra precautions would be taken during dry periods on government controlled land to prevent the potential for fires by increasing the altitude of release to 1,000 feet above ground level. If no fire hazard exists on government controlled land, there is no minimum release altitude.

2.1.4 Ground Operations

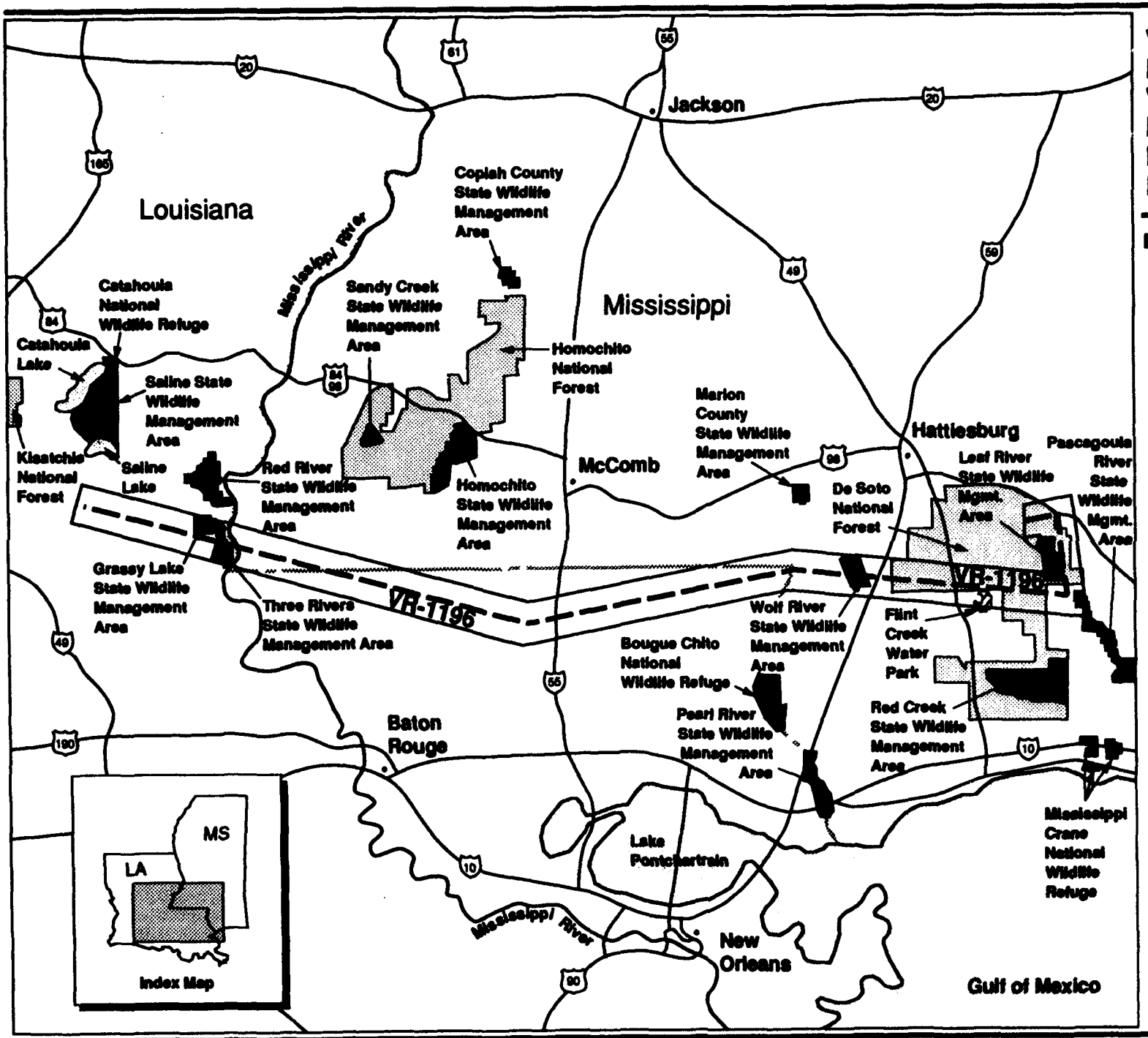
Ground operations would generally consist of the maintenance and flight preparation activities for the F-16 aircraft.

Maintenance activities would involve corrosion control operations, munitions maintenance, aircraft radar/antenna repair, structural repair, wheel and tire repair, engine testing, fuel system maintenance, and composite



Vicinity Location Map of Visual Route - 179, Alabama, Mississippi

Figure 2-1



Vicinity Location Map of Visual Route-1196, Louisiana, Mississippi

EXPLANATION

- Visual Route (VR) -1196 Centerline
- VR-1196 Route Width
- State Boundary
- National Forest Land
- National Wildlife Management Preserve/Refuge
- State Wildlife Management Area
- County Park

0 5 10 20 Miles

Figure 2-2

AFR/018-2

maintenance. During maintenance activities, cleaning solvents, paints, epoxies, paint strippers, and lacquers would be used (General Dynamics, 1989). The amounts of hazardous waste produced from these operations would be similar to the current A-10 mission which annually produces approximately six 55-gallon drums of hazardous waste. Hazardous wastes generated at NAS New Orleans are managed in accordance with applicable federal and state regulations.

Other maintenance activities would consist of static power testing of the F-16 engine on engine test stands at the proposed Hush House. This facility would be washed down periodically. Fluids from this site would contain small amounts of hydrocarbons. All washdown water from this facility would be diverted into an oil/water separator unit, where hydrocarbons would be removed and containerized as hazardous waste. The remaining water would be directed to the station's sanitary sewer system.

Once hazardous waste is placed into containers, it would be transferred to NAS New Orleans' hazardous waste storage area, where it would be picked up within 90 days by the Defense Reutilization Marketing Office. Hazardous waste generated by the Proposed Action would be disposed in accordance with NAS New Orleans Hazardous Waste Management Plan (Department of the Navy, 1989). Personnel safety for ground operation activities would be in accordance with applicable Occupational Safety and Health Administration, U.S. Air Force Occupational Safety and Health, and Navy regulations.

As part of the flight preparation activities, both jet fuel (JP-5) and hydrazine (Emergency Power Unit propellant) would be loaded onto the F-16. JP-5 storage already exists at NAS New Orleans; hydrazine propellant has never been used at this station. Hydrazine propellant, consisting of 70 percent hydrazine and 30 percent water, is used as an emergency power source on the F-16 and is referred to as H-70. The H-70 would be shipped to NAS New Orleans in 55-gallon drums by truck and transported directly to the hydrazine storage facility where no more than four containers would be stored at one time. Transportation of H-70 would be in accordance with Bureau of Explosives (BOE) Tariff Number BOE-6000-I (Association of American Railroads, 1989) and Department of Transportation regulations. At the hydrazine facility, H-70 would be transferred into the 6.5 gallon tanks used on the F-16 in the H-70 servicing area, using a closed system charging unit. Once H-70 tanks are installed on an F-16, they remain in place until required for back-up power in the unlikely event of engine, hydraulic, or electrical emergencies (i.e., failures) on an F-16. Tanks partially emptied by use would be removed from the aircraft and transported to the hydrazine storage facility. The remaining H-70 would be placed in hazardous waste containers and shipped to an off-site, authorized treatment facility equipped to handle neutralization in a safe and effective manner.

During normal operations, the equipment and procedures specified for changing the H-70 tanks on an aircraft would preclude inhalation by pilots and technicians. Measures to stop the potential consequences of accidental spills would be oriented toward the protection of technicians, the air, and ground water. For example, impacts to technicians, such as eye irritation and toxic effects resulting from skin absorption and inhalation, would be prevented by use of rubber gloves, protective clothing, face shields, and respiratory protection. Safety showers and eyewash fountains would also be available for first aid. A ventilation system in the hydrazine facility would maintain hydrazine levels in the work place below the threshold limit for an eight-hour working exposure of 0.1 parts per million. In addition, the concentration of H-70 in the air would be monitored in the hydrazine storage area. The hydrazine facility and hydrazine purge pad would be designed such that any spill would be contained in that facility. Spills within the hydrazine facility would flow to a collection tank capable of containing and retaining properly diluted H-70 and neut[illegible]er solution.

The use of H-70 at NAS New Orleans would be incorporated into NAS New Orleans Oil and Hazardous Substance Spill Contingency Plan (Environmental and Safety Design, Inc., 1991), and the Hazardous Waste Management Plan (Department of the Navy, 1989). These plans would be updated to handle accidental spills, dripping that may occur during normal use of H-70, and procedures for neutralizing spilled hydrazine. In addition, updates would include procedures to contain, clean up, and store the H-70 without neutralization before it is shipped to a facility that can neutralize the H-70.

2.1.5 Personnel Summary

The proposed conversion from the A-10 to F-16 would cause a decrease in the total military and civilian staffing requirements (Table 2-1). Full-time employment associated with AFRES activities would increase by 2 percent and reservist employment would decrease by 24 percent.

Table 2-1. Comparison of Staffing Requirements for Aircraft Conversion

Employment Category	A-10 (current)	F-16 (proposed)	Conversion Change	Percent Change
Full-time	337	345	8	2
Reservist (Part-time)	1,018	771	-247	-24
Total	1,355	1,116	-239	-18

2.1.6 Construction Program

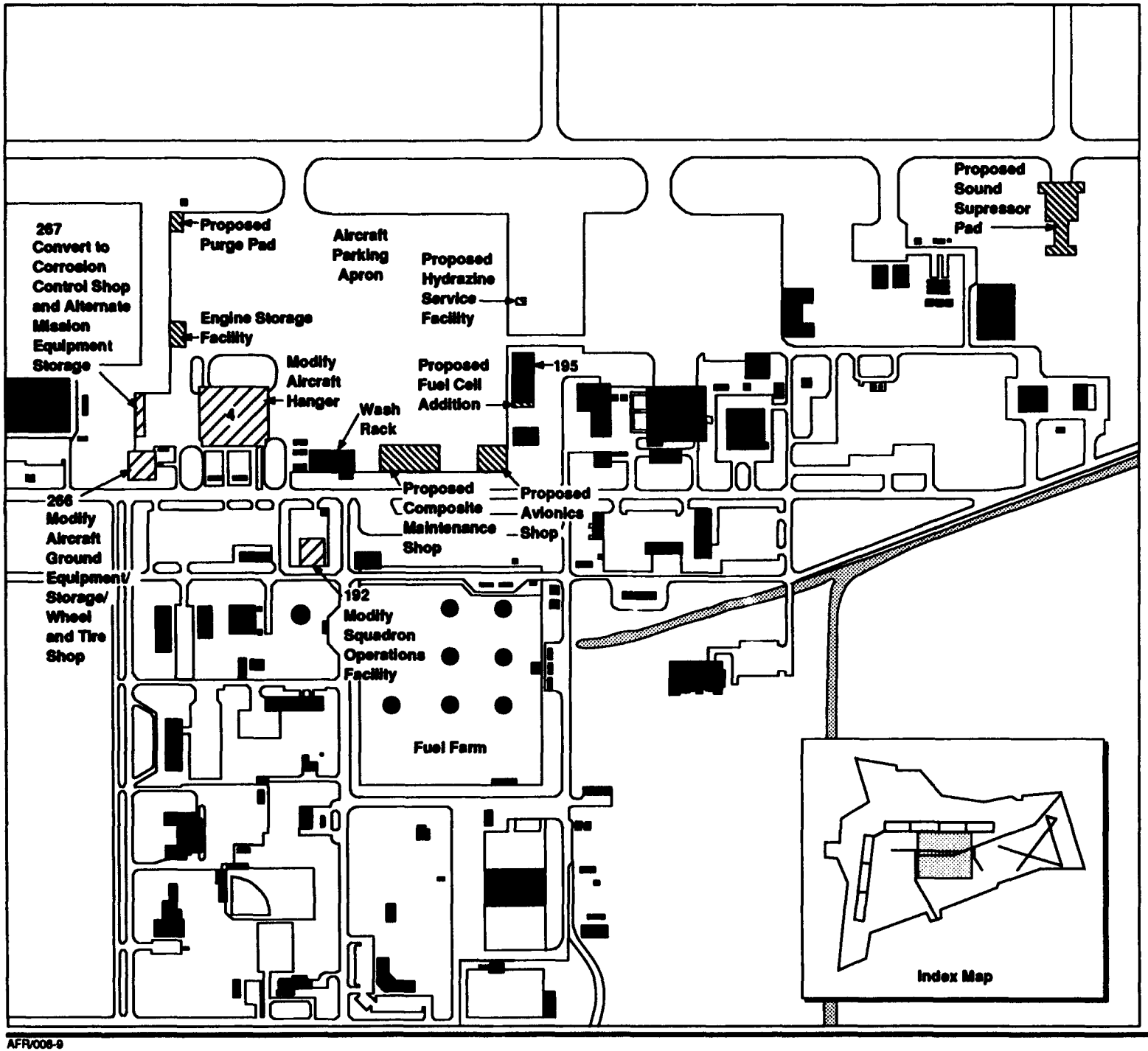
The aircraft conversion would require new construction, as well as the modification of existing facilities at NAS New Orleans (Figures 2-3 and 2-4). Construction is planned to start in fiscal year 1993, and should last approximately 1-1/2 years. Approximately 200 construction personnel may be required during peak construction activities. Most construction activities would take place on an existing aircraft parking apron, or a previously disturbed grass area. The Munitions Storage Facility would involve construction in an undisturbed area.

New construction would consist of the following:

- An Avionics Shop - Approximately 11,200 square feet with a fire protection system, Class B Vault, and utilities
- A Sound Suppressor (Hush House) Pad - Approximately 25 feet by 200 feet, with an access road, sound attenuation, blast deflector, utilities, extensive soil stabilization, and construction of a reinforced concrete foundation
- A Munitions Storage Facility - An approximately 1,500 square foot building, with 16,500 square feet of access pavement surrounded by security fencing (Figure 2-4)
- A Composite Maintenance Shop - Approximately 21,000 square feet
- Engine Storage Facility - Approximately 2,400 square feet
- A Hydrazine Service Cell - Approximately 700 square feet, with a 50-foot by 60-foot, 6-inch curbed aircraft pad for hydrazine purging.

Modification to existing facilities would include:

- Building 90, Munitions Maintenance Facility - Reconfiguration of interior walls and doors and installation of additional power receptacles and compressed air lines
- Building 195, Fuel Systems Maintenance Hangar - Expand building by approximately 2,000 square feet to add on fuel cell
- Building 192, Squadron Operations Facility - Interior alterations consisting of moving walls and doors
- Hangar 4 - Alter first floor shop space in south lean-to, interior additions or extensions of utilities, new interior finishes, and reconfiguration of interior walls. In addition, modifications in the



Proposed Facilities Location Map

Naval Air Station
New Orleans,
Louisiana

EXPLANATION

- Proposed New Facilities
- Proposed Modified Facilities
- Water Canal

0 125 250 500 Feet

Figure 2-3

AFR/008-9

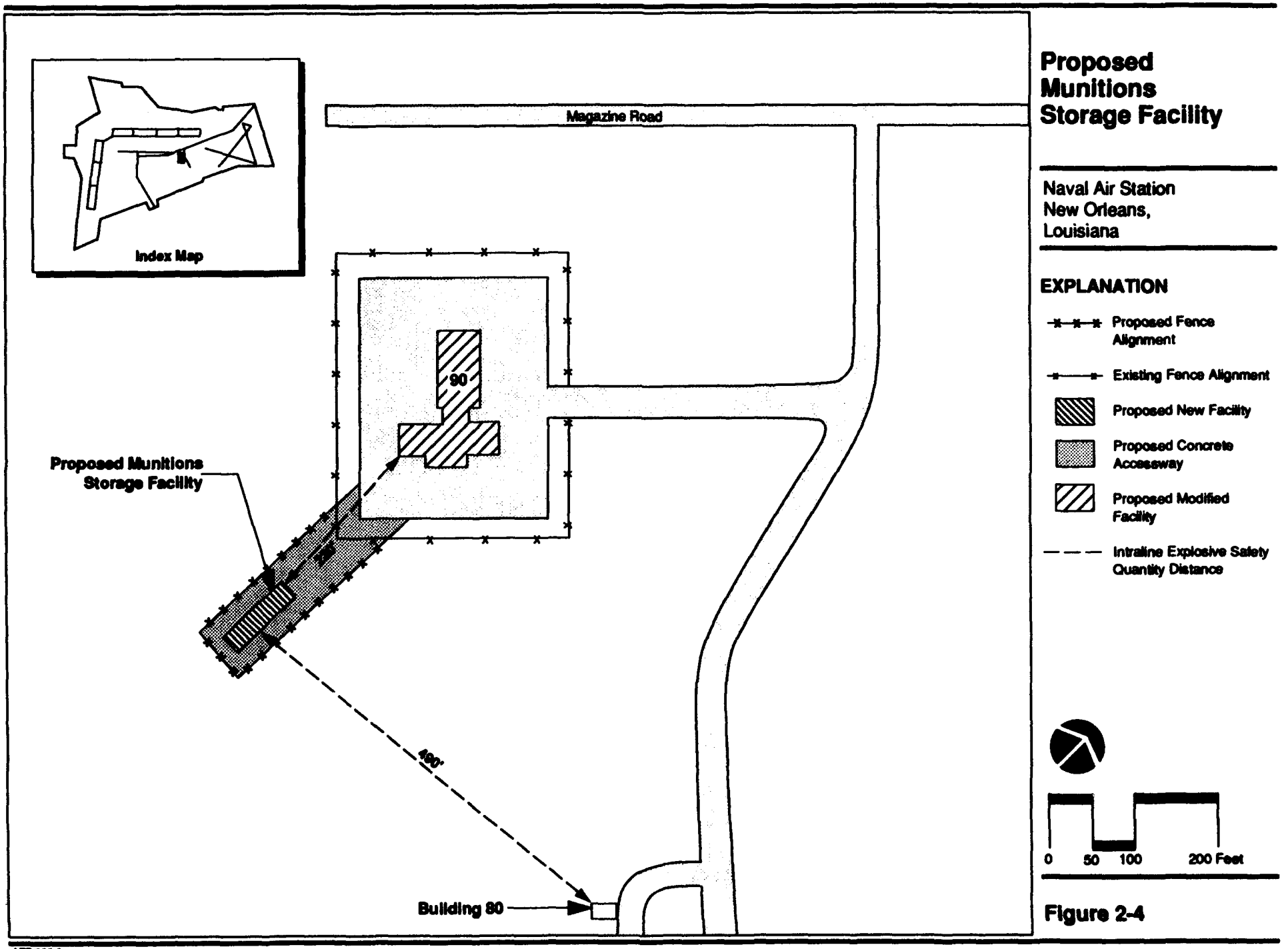


Figure 2-4

AFR/009-3

hangar bay would include installing an aqueous fire fighting foam suppression system with containment system.

- Building 266, Aircraft Ground Equipment Shop/Storage and Wheel and Tire Shop - Reconfiguration of power receptacles, installation of room ventilation, and extension of compressed airlines

- Building 267, Corrosion Control Shop and Alternate Mission Equipment Storage - Installation of additional power receptacles, overhead lighting improvements, and new interior finishes

- Additional aircraft apron security lighting for aircraft parking would be required.

During construction, erosion control would consist of silt fences, hay bales, or other such means or methods as determined by the designer. Dust would be controlled by watering or application of emulsions. Dirt, dust, rocks, or other construction debris would not be permitted on the runway or aircraft taxi access. Solid, hazardous, and toxic construction waste would be containerized and disposed off-station by the construction contractor (Air Force Reserve, 1990a). If a hazardous waste spill should occur from construction, the contractor would notify the station's environmental coordinator and the spill would be handled in accordance with the spill plan. Staging areas for construction equipment and supplies would utilize existing concrete areas or previously disturbed grass areas. After construction, areas disturbed would be restored to pre-construction conditions.

During construction at NAS New Orleans, there is a slight potential to disturb cultural resources. If any resources are encountered during construction, work would be stopped immediately, and the station's Historic Preservation Coordinator would be consulted regarding evaluation of the cultural resources.

For interior building modifications, ventilation and plastic dust curtains would be utilized during the renovation work. The proposed buildings to be modified may contain asbestos. To avoid impacts to workers, these buildings would be surveyed for asbestos prior to final design review. If asbestos is found in the areas to be modified, it would be removed and disposed by a certified asbestos contractor before the start of the construction program.

2.2 NO-ACTION ALTERNATIVE

The No-Action Alternative would mean that the 18 A-10 aircraft assigned to the 706th FS would remain in place, construction planned in association with the conversion would not take place, and the personnel requirements for AFRES activities at the station would remain unchanged.

2.3 ALTERNATIVES ELIMINATED FROM DETAILED STUDY

Alternatives to the Proposed Action would be to convert another AFRES A-10 unit to the F-16. During the siting process, Grissom Air Force Base (AFB), Indiana, Richards-Gebaur AFB, Missouri, and Barksdale AFB, Louisiana were considered as possible alternative locations. Grissom AFB was eliminated because the base AFRES unit was better suited to convert to a KC-135 tanker force unit, and Richards-Gebaur AFB was eliminated because it lacks the air-to-ground airspace that is accessible to NAS New Orleans. Soon after the siting process was conducted, Grissom AFB and Richards-Gebaur AFB were recommended for closure by the 1991 Defense Base Closure and Realignment Commission.

Barksdale AFB, Louisiana, is the location for the AFRES A-10 Schoolhouse, which supports all Air National Guard and AFRES pilot training requirements for the A-10. The A-10 school is planned to remain in the program indefinitely; therefore, it is not operationally feasible to convert the squadron to F-16s. In addition, the Barksdale AFB A-10 squadron is well situated to support local nearby Army units. Therefore, among the possible AFRES unit locations, NAS New Orleans is the only operationally viable location for the F-16 C/D aircraft conversion program.

2.4 COMPARISON OF THE PROPOSED ACTION AND NO-ACTION ALTERNATIVE

This section presents a comparative analysis of the Proposed Action and the No-Action Alternative. Detailed discussions of the potential effects of the Proposed Action and No-Action Alternative are in Section 4.0, Environmental Consequences.

Air Quality

NAS New Orleans. Implementation of the Proposed Action would result in lower total emissions of air pollutants than from the current A-10 activities. Under the No-Action Alternative, current use of the A-10 would continue and, therefore, no reduction in emissions would occur.

Military Training Routes. Air pollutants along the length of the MTRs would increase from the Proposed Action. However, the status of air quality in the region, which is below National Ambient Air Quality Standards, would not change. Under the No-Action Alternative there would be no increase in aircraft emissions.

Airspace

There would be no significant change to airspace management or use from implementation of the Proposed Action or No-Action Alternative.

Biological Resources

NAS New Orleans. Implementation of the Proposed Action would reduce habitat available to biological species on NAS New Orleans by 0.2 percent. Except for the American alligator, which has been recently reclassified from "Threatened" to "Threatened by Similarity of Appearance", no federally or state-listed threatened or endangered species occur on the station. The American alligator would not be affected by the Proposed Action. Under the No-Action Alternative, no additional environmental consequences would be anticipated.

Military Training Routes. The Proposed Action would increase noise and visual disturbances to biological species along the MTRs. In addition, the potential for bird/aircraft strike would increase during times of the day and year when bird flight activity is high (e.g., migratory season). However, aircraft flight would occur at altitudes where noise levels would not significantly effect biological species. In addition, it is standard Air Force policy to avoid bird/aircraft strikes by not flying at certain altitudes, times of day/year or in airspace where anticipated bird migration is thought to be concentrated. Under the No-Action Alternative increase flight activity on the MTRs would not occur; therefore, no significant impacts would occur.

Cultural Resources

NAS New Orleans contains no known cultural resources; however, there is a slight potential for encountering resources during construction activities. If any cultural resources are encountered during construction, work would stop immediately and the station's Historic Preservation Coordinator would be consulted before construction work would be allowed to proceed. No disturbance to cultural resources would occur from the No-Action Alternative.

Health and Safety

NAS New Orleans. As part of the Proposed Action, a propellant, H-70, would be used at NAS New Orleans. In the unlikely event of a spill, H-70 could present a potential health impact if it were inhaled or came into contact with body tissue. The control of potential impacts would be based on established procedures and equipment specified by Air Force Occupational Safety and Health, Navy, and Occupational Safety and Health Administration regulations. Additional health and safety impacts could occur if construction personnel come into contact with asbestos. To avoid impacts to workers, buildings to be modified would be surveyed, and any asbestos which could not be avoided would be removed and disposed by a certified asbestos contractor prior to the start of building modification. No changes to the health and safety of the station's personnel would occur from the No-Action Alternative.

Military Training Routes. From implementation of the Proposed Action there is a remote potential for increased flare-induced forest fires and bird-aircraft strike hazards. However, the infrequent use of flares (20 a year on VR-179) and special precautions such as increasing the altitude of flare release during dry periods and avoiding low level flight over bird sensitive areas would reduce these impacts. The Proposed Action would not increase the potential for mid-air collision on these routes. Under the No-Action Alternative there would be no increase in flight risk.

Hazardous Materials/Waste Management

The types and volumes of hazardous materials/waste expected from the Proposed Action would be similar to those associated with current AFRES operations except for the use of H-70 as a propellant which has never been used at NAS New Orleans. However, the use of H-70 would be limited and would be incorporated into appropriate station spill and waste management plans. Hazardous waste and materials generated during construction would be cleaned up and disposed by the construction contractor. Under the No-Action Alternative, no new materials would be introduced to NAS New Orleans and current hazardous waste management practices would continue.

Infrastructure

Current infrastructure is adequate to handle the proposed facilities and temporary construction personnel at NAS New Orleans. In addition, after the conversion there would be a reduction in AFRES personnel using the station's infrastructure. Infrastructure use would remain the same under the No-Action Alternative.

Land Use

NAS New Orleans. The proposed conversion would increase noise levels within the area northeast of NAS New Orleans. The off-base acreage exposed to noise levels greater than 65 dB would increase by approximately 4 percent in mostly undeveloped areas around Belle Chasse. Under the No-Action Alternative, no changes to land use would occur.

Military Training Routes. Increased noise levels from use of the MTRs would not result in any change to land use. Under the No-Action Alternative no change to land use would occur.

Noise

NAS New Orleans. Noise levels would increase in the area of NAS New Orleans. However, comparison of baseline noise contours with the

Proposed Action shows little variance (minor increases). Noise levels under the No-Action Alternative would be unchanged from current levels.

Military Training Routes. Noise levels on VR-179 would increase from 50 dB to 52 dB and on VR-1196 from 46 dB to 48 dB. These noise levels are below applicable land use compatibility guidelines. Current noise levels under the MTRs would remain unchanged from the No-Action Alternative.

Socioeconomics

The conversion would reduce part-time (weekends and two weeks a year) reservists by 247 personnel (24 percent) and increase full-time reservists by 8 personnel (2 percent). The reduction in part-time reservists personnel is less when converted to full-time equivalents of 30 to 35. Because the decrease in personnel would be small in comparison to the large population of the New Orleans area, any impact to the local economy would be negligible and short-term. Construction activities would provide some short-term economic benefit to the local community. Current employment would continue under the No-Action Alternative and there would be no change to local economic conditions.

Water Resources

NAS New Orleans. Standard erosion control measures would be implemented during construction to avoid soil runoff into the local water system. Hazardous waste spills and materials from construction and operations would be cleaned up, placed in containers, and disposed in accordance with NAS New Orleans guidelines to prevent impacts to water resources. In addition, waste from aircraft wash down would be directed to the sanitary sewer system and would not come in contact with local water resources. If the aqueous fire fighting foam system is used, it would be contained and disposed and would not impact water resources. No changes to water resources would occur from the No-Action Alternative.

Military Training Routes. There is a slight potential for increased soil erosion and thus stream turbidity from loss of vegetation which could potentially be caused by flare-induced fires on VR-179. However, the potential for fires is low because flares would be used infrequently (20 per year), and the altitude of release would allow for complete burning before ground contact. There would be no change in water quality under the No-Action Alternative.

3.0 AFFECTED ENVIRONMENT

This chapter profiles the environmental components at NAS New Orleans and the area underneath the MTRs. The resources addressed include relevant natural or human environments that are likely to be affected by the Proposed Action and No-Action Alternative.

Based on the installation and operational characteristics of the Proposed Action (see Section 2.1), it was determined that there is potential for the following resources to be affected at NAS New Orleans: air quality, airspace, biological resources, cultural resources, health and safety, hazardous materials/waste management, infrastructure, land use, noise, socioeconomics, and water resources. For MTR use the resources addressed are: air quality, airspace, biological resources, health and safety, land use, noise, and water resources.

3.1 LOCATION, HISTORY, AND CURRENT MISSION OF THE INSTALLATION

3.1.1 Location

NAS New Orleans is located near Belle Chasse in Plaquemines Parish; it lies approximately 16 roadway miles south of the New Orleans Central Business District. The station is situated between the Mississippi River on the southeast and the Intracoastal Waterway on the northwest. Access is provided by Louisiana Highway 23 (Belle Chasse Highway) which lies to the southeast between the station and the Mississippi River. Highway 23 travels southward from New Orleans to Belle Chasse (Naval Facilities Engineering Command, 1988).

3.1.2 History

NAS New Orleans is the only installation in the United States that was planned and built to function as a Joint Services air reserve training center.

Originally, the Navy established the Naval Air Reserve Air Base on the shores of Lake Pontchartrain, Louisiana, in 1941. In November 1942, the air base was designated as an NAS. Its change to an active naval facility was caused by the requirement for training naval aviators in the early part of World War II. Following the war, the installation was again used for Naval Air Reserve functions. The idea of a Joint Air Reserve Training Center was conceived in 1948 with plans for the facility to be at its present location. Construction began in 1955 and first operations commenced in 1958. The new installation retained the name Alvin Callender Field after a native of New Orleans and World War I aviator who lost his life while fighting with the Royal Flying Corps (Naval Facilities Engineering Command, 1988).

3.1.3 Current Mission

The mission of NAS New Orleans is to train all assigned reserve units for their mobilization assignments. The units include the Naval Air Reserve, the Marine Air Reserve Training Detachment, 926th FG AFRES, and the 159th FG Louisiana Air National Guard. Additional units stationed at NAS New Orleans include U.S. Customs, Civil Air Patrol, and U.S. Coast Guard (Naval Facilities Engineering Command, 1988).

3.2 ENVIRONMENTAL SETTING

3.2.1 Air Quality

3.2.1.1 NAS New Orleans. NAS New Orleans is located in the Louisiana South East Region Air Quality District. Air quality in the vicinity of NAS New Orleans is currently in attainment for federal and state air quality standards (Louisiana has adopted Federal Air Quality Standards). Because no air quality monitoring is conducted at NAS New Orleans, inferences about air quality have been based on data collected at sampling locations elsewhere in the New Orleans area (monitoring stations are located approximately 6 to 8 miles away).

Table 3-1 compares ambient air quality data measured in the New Orleans area in 1989 (Louisiana Department of Environmental Quality, 1989) with federal and state standards. Currently, NAS New Orleans is in compliance with state regulations regarding air emissions permitting.

3.2.1.2 Military Training Routes. The MTRs being considered for this study extend over central Louisiana, southern Mississippi, and southwestern Alabama. The length of the MTRs vary from 170 to 275 miles. Operational altitudes along these MTRs average 500 feet above ground level.

Air quality in the region of the MTRs is good. The areas of Alabama, Louisiana, and Mississippi where VR-179 and VR-1196 are located are either in attainment for federal primary standards or listed as unclassified (generally accepted by U.S. Environmental Protection Agency as being in attainment). Such areas are considered Prevention of Significant Deterioration Class II areas, where limits on the increments of nitrogen dioxide (NO_x), particulate matter, and sulfur dioxide (SO_x) have been established. Table 3-2 shows the maximum allowable increase in baseline concentrations in Class II areas. Although Class II area increments apply to stationary sources, in order to conduct air quality analysis these were applied to low-flying aircraft.

Emission calculations for current aircraft (Table 3-3) were estimated based on patterns of different aircraft types using the VRs. These estimates are shown as ground level, centerline concentrations and are compared to

Table 3-1. Comparison of Ambient Air Quality Measurements in the New Orleans Area with Federal and Louisiana State Standards

Pollutant	Federal and Louisiana Standards			1989 Ambient Value	1989 Number of Exceedances
	Averaging Time	Primary	Secondary		
Carbon Monoxide (ppm)	8 Hour	9	9	A	0
	1 Hour	35		15.8	0
Nitrogen Dioxide (ppm)	1 Year	0.05	–	A	0
Ozone (ppm)	1 Hour	0.12	–	0.136	1*
Sulfur Dioxide (ppm)	1 Year	0.03	–	A	0
	24 Hour	0.14	–	A	0
	3 Hour	–	0.50	A	0
Total Suspended Particulates ($\mu g/m^3$)	1 Year	75	60	Not Analyzed	–
	24 Hour	260	150		–
Particulate Matter less than 10 micron ($\mu g/m^3$)	1 Year	50	–	Not Analyzed	–
	24 Hour	150	–		–
Lead ($\mu g/m^3$)	3 Month	1.5	–	Not Analyzed	–

Note: 1989 Values based upon daily one-hour maximum values supplied by Louisiana Department of Environmental Quality from monitoring stations located at:

Arabi - St. Bernard Parish
Meraux - St. Bernard Parish
City Park - Orleans Parish
Tulane Medical Center - Orleans Parish
Kenner - Jefferson Parish.

A - Indicates that this parameter cannot be determined from the daily one-hour maximum values supplied.
ppm - Parts per million.
$\mu g/m^3$ - Micrograms per cubic meter.

* Although the 1989 ozone ambient concentration exceeded the National Ambient Air Quality Standards, the region is still considered in attainment for ozone because the exceedance occurred during only one hourly averaging period, which is allowed under the federal ozone standard.

Table 3-2. Prevention of Significant Deterioration (PSD) Class II Increments

Pollutant	Averaging Period	PSD II Increments (micrograms per cubic meter)
Carbon Monoxide	-	-
Nitrogen Dioxide	Annual	25
Particulate Matter	24-hour	37
	Annual	19
Sulfur Dioxide	3-hour	512
	24-hour	91
	Annual	20

Table 3-3. Current MTR Air Emissions Concentrations

Pollutant	Averaging Period	MTR Concentration (micrograms per cubic meter)		Federal Ambient Air Quality Primary Standards (micrograms per cubic meter)
		VR-179	VR-1196	
Carbon Monoxide	1-Hour	3.8	2.7	40,000
	8-Hour	0.19	0.11	10,000
Nitrogen Dioxide	Annual	0.001	0.0005	100
Particulate Matter	24-Hour	0.008	0.004	150
	Annual	0.0001	0.00006	50
Sulfur Dioxide	3-Hour	0.13	0.06	1,300
	24-Hour	0.008	0.004	365
	Annual	0.001	0.00005	80

applicable standards. The emissions calculations were performed by using the Multiple Aircraft Instantaneous Line Sources Dispersion Model, which provides conservative estimates of ground level pollutant concentrations resulting from aircraft engine emissions along low-altitude MTRs. The monthly aircraft sortie data for VR-179 and VR-1196 used in the modeling effort was provided for each aircraft. For pollutant averaging periods of less than a month, a worst-case was assumed of all the monthly aircraft sorties being flown in that period.

3.2.2 Airspace

The airspace discussed below addresses the area which would be used by the 706th FS. Because this airspace includes all areas where flight would occur the affected environment combines NAS New Orleans and the MTRs.

Airspace is a finite resource that can be defined vertically and horizontally, as well as temporary, when describing its use for aviation purposes. As such, it must be engaged and utilized in a manner that best serves the competing needs of commercial, general, and military aviation interests. The Federal Aviation Administration is responsible for the overall management of airspace and has established different airspace designations that are designed to protect aircraft while operating to or from an airport, transiting enroute between airports, or operating within "special use" areas identified for defense-related purposes.

Rules of flight and air traffic control procedures have been established which govern how aircraft must operate within each type of designated airspace. All aircraft operate under either instrument flight rules or visual flight rules.

The type and dimension of individual airspace areas established within a given region and their spatial and procedural relationship to each other is contingent upon the different aviation activities conducted in that region. When any significant change is planned for any region, such as airport expansion, a new military flight mission, new or expanded training missions, etc., the Federal Aviation Administration will reassess the airspace configuration to determine if such changes will adversely affect (1) air traffic control systems and/or facilities, (2) movement of other air traffic in the area, or (3) airspace already designated and used for other purposes (i.e., military operating areas, restricted areas, or MTRs). The airspace around NAS New Orleans currently accommodates civilian, commercial, and military aircraft.

Visual Flight Rule Military Training Routes. All aircraft operate on a visual flight rule flight plan on VRs, although flight to/from VRs on an instrument flight rule flight (under air traffic control) is encouraged to the extent compatible with the mission. Aircraft on the route set the transponder code to identify to air traffic control the aircraft's presence on the route. Separation from all other aircraft (military and civil) is through "see and avoid". Mandatory altitudes and separation vectors may be applied to aircraft by air traffic control if the VR transits a Terminal Control Area. Additionally, if the VR transits a Federal Aviation Regulation Part 91 controlled airspace, coordination with air traffic control and compliance with Airport Radar Service Area procedures are required.

VR-179 and VR-1196 are visual flight rule routes which are a category of special use airspace designated by DOD in coordination with the Federal

Aviation Administration. These routes are used to conduct military flight operations below 10,000 feet mean sea level at speeds above 250 knots. Scheduling and use of the VR-179 and VR-1196 is coordinated through Combat Training Group-Gulfport, Gulfport, Mississippi.

Currently, other units possessing F-16 aircraft are using the routes to accommodate low-altitude missions. Typical examples of current missions are: low-altitude navigation, photo reconnaissance, terrain following radar, terrain following and terrain masking (including ridge crossing), low level target/drop zone ingress egress procedures, low altitude information training, special operations, low altitude refueling, and air intercepts.

VR-179. VR-179 originates approximately 15 statute miles south of Bay St. Louis, Mississippi, over the Gulf of Mexico and terminates in DeSoto Military Operating Area (see Figure 2-1).

The route varies in width from 2-8 miles and is designed and designated to accommodate military fighter aircraft such as the F-16. Aircraft altitudes vary from 100 feet above ground level to 10,000 feet mean sea level for the entire length. Hours of operation are from 6 a.m. to 11 p.m. local daily; other times are by the Notice to Airmen programs through the Federal Aviation Administration.

VR-1196. The tactics of VR-1196 along with the type of aircraft are the same as VR-179. VR-1196 begins about 20 statute miles south-southeast of Alexandria, Louisiana, and terminates in the DeSoto Military Operating Area in south central Mississippi (see Figure 2-2). The hours of operation are 8 a.m. to 9 p.m. daily, and other times by Notice to Airman programs through the Federal Aviation Administration. The route width is 6 nautical miles for the entire length and the altitudes of use vary from 500 to 1,500 feet above ground level.

3.2.3 Biological Resources

3.2.3.1 NAS New Orleans. The description of the flora, fauna, and wildlife species discussed below are based on literature reviews, aerial photographs, and a reconnaissance survey of the NAS New Orleans and the proposed munitions storage area. A field survey of the remainder of the construction area was not conducted because it would take place on a concrete parking apron and a mowed grass field located next to Runway 04/22.

Vegetation. Vegetation in the Munitions Storage Facility area is fairly uniform and primarily consists of mixed hardwood species typically found on bottomlands in the southern Mississippi Alluvial Plain. The bottomland hardwood forest is dominated by a variety of moisture-tolerant oaks, gums, willows, ash, elm, hackberry, sycamore, and cottonwood.

Land within the project area had been disturbed at one time and is currently in various stages of vegetational succession. No old growth bottomland hardwood forest areas were noted during the site visit.

Tree species observed at the site were those typically found in wet soils and subject to periodic or seasonal inundation. These species included black willow, eastern cottonwood, green ash, sweet gum, and various water-tolerant oaks. Appendix A includes a list of the more common trees which were observed or which would be expected to occur at this site.

The well-drained lands in the project area support a lush growth of understory plants, including elderberry, trumpet creeper, cross vine, Virginia creeper, ragweed, and Johnson grass.

In 1989, NAS New Orleans was surveyed and mapped for wetlands by the U.S. Army Corps of Engineers. Based on this investigation it was determined that portions of NAS New Orleans are wetlands which are subject to U.S. Army Corps of Engineers jurisdiction. Consultation with the New Orleans District Corps of Engineers determined that none of the proposed construction would be within a designated wetlands area. Therefore, additional work to determine exact wetland boundaries and/or acreage is not required.

Wildlife Resources. In general, southeastern Louisiana supports a diverse assemblage of animal and bird species. Since the occurrence of common animals can be related to particular habitats, this discussion will describe the mammals, birds, fishes, and reptiles which occur in the bottomlands hardwood forest of southeastern Louisiana.

Mammals in the project area include the raccoon, swamp rabbit, fox squirrel, armadillo, and white-tailed deer. Resident species of commercial importance include the nutria, opossum, raccoon, mink, otter, and bobcat. Appendix A includes a list of mammals that have either been observed or, based on distribution and habitat requirements, would be expected to occur within the proposed project area.

Approximately 400 species of resident, winter migrant, and fall and spring bird species occur in Louisiana, which lies at the southern terminus of the Mississippi Flyway (Lowery, 1974). Because NAS New Orleans is in a geographic location which lies in close proximity to a large number of saline and freshwater wetlands, numerous bird species could be expected to occur on the station. Some of these species would be expected to use portions of the station during the year, especially as transient visitors or migrants.

Game species in the area include the mourning dove, American woodcock, common snipe, and northern bobwhite.

The only permanent body of open water in the vicinity of the proposed project is Lake Baney, a 1-acre lake located northeast of the proposed Munitions Storage Facility. Because of the small size of the lake and associated wetlands, waterfowl would be expected to be present in relatively small numbers.

Fish species stocked in Lake Baney and occurring in canals on the station include large mouth bass, bluegill, channel catfish, flathead catfish, carp, and minnows. The mosquito fish also occurs in canals on the station, even those which are choked with vegetation and too shallow to support other fish. Other small fishes occurring in weedy areas include several species of topminnows, the least killfish, and the sailfin molly.

A large variety of amphibians and reptiles inhabit the bottomland forests and coastal wetlands of southeastern Louisiana. According to the Corps of Engineers, 8 species of salamanders, 14 species of frogs and toads, 16 species of turtles, 7 species of lizards, and 25 species of snakes have a moderate to high probability of occurrence in the forested areas of southeastern Louisiana and NAS New Orleans. Appendix A includes a list of the more common species which would be expected to occur in the vicinity of the project area. In addition, the American alligator (*Alligator mississippiensis*) is occasionally found near still or slow-moving waters (e.g., lakes, canals, and drainage ditches) on NAS New Orleans.

Threatened and Endangered Species. To determine whether any federal- or state-listed species could be adversely affected by the Proposed Action, letters were sent to the U.S. Fish and Wildlife Service and the Louisiana Department of Fisheries and Wildlife requesting information about any listed species which may be present on NAS New Orleans. Their replies indicated that there are no threatened or endangered plant or animal species known to occur within the station (Appendix B).

Two federally listed endangered species, the bald eagle (*Haliaeetus leucocephlus*) and the brown pelican (*Pelecanus occidentalis*) do occur in southeastern Louisiana. The bald eagle resides mainly in the southeastern coastal parishes in freshwater marshes and swamps. The brown pelican is usually found along the borders of Barataria Bay. NAS New Orleans lacks suitable habitat to sustain either of these species, which makes it highly unlikely that these species would be encountered in the project area except as transient visitors.

As discussed earlier, American alligators are occasionally encountered along canals and drainage ditches on the station. The American alligator has recently been reclassified from "Threatened" to "Threatened by Similarity of Appearance". The American alligator is similar in appearance to the endangered American crocodile (*Crocodylus acutus*) which does not occur in the NAS New Orleans area. Although the American alligator is protected

under the Endangered Species Act, the U.S. Fish and Wildlife Service permitted re-establishment of an annual hunting season beginning in 1975. Alligator trapping is strictly regulated through a special tagging and licensing system. Trapping outside the designated areas or within the designated areas at times other than during permitted seasons would violate both federal and state laws.

3.2.3.2 **Military Training Routes.** The MTRs cross through the southern portions of three states: Alabama, Mississippi, and Louisiana (see Figures 2-1 and 2-2). These routes cross over a variety of vegetation and habitat types. Section 3.2.8 Land Use lists the potentially sensitive national and state biological reserves found under the flight paths of the routes.

Vegetation. The sandy soils of the East Gulf Coastal Plain support second growth forests of longleaf and slash pine. Mixed pine and hardwood stands tend to be located in the north central portion of the region. In upland sites of floodplains, side slopes, and ridges, longleaf pine is dominant, with hardwood species such as blackjack oak, being dominant. Several understory communities are associated with longleaf pine and vary according to available moisture. Dry sites sustain primarily grasses, including the dominant pinehill bluestem and slender bluestem and a few species of legumes or shrubs. Moist sites are usually characterized by gallberry, wax myrtle, and blackberry association with grasses and forbs. Depending on the frequency of fire, shrubs and midstory of holly, water oak, red maple, and other hardwoods may encroach.

Wildlife. The southern pine forest, dominated by species of pine, gallberry, and myrtle holly, is a fire-climax community where frequent fires produce the habitat in various stages of succession. Wildlife is distributed according to the suitability of species to these areas. Meadows opened by fire are generally dominated by grass/forb communities for as long as three years and in that time, provide ideal habitat for early succession of wildlife species such as rabbits, voles, insects, reptiles, and selected game and nongame birds. A shrub habitat provides preferred habitat for many songbird species.

Hardwood, pines, and their associated understory provide a food supply of fruits, buds, cones, and woody browse, which supports a diverse community of birds and mammals. The whitetail deer is the most commonly encountered of the large mammals which inhabit the area. Others include the bobcat, coyote, and river otter. The black bear is extremely rare but may occur in the area. Smaller mammals include various rats, mice, squirrels, voles, shrews, bats, and rabbits. Furbearers include the beaver, muskrat, mink, raccoon, opossums, red and grey foxes, and striped and spotted skunks. Forested stream courses are especially important for hunting and travelling corridors.

The area includes the Mississippi Flyway for migrating waterfowl, songbirds, shorebirds, and birds of prey. The sea bird groups have varying seasonal migration movements, daily flight routines, and flying heights. The majority of small birds migrate at night, usually between sunset and 11 p.m. The nocturnal migration takes place at an altitude below 2,000 feet above ground level, with mean elevations of about 1,000 feet. During migration, songbirds are often concentrated over major rivers or other landmarks, and fly between 500-3,000 feet above ground level during nocturnal migration. Waterfowl, during migratory periods, fly up to 10,000 above ground level, especially during the night. During local, daily flights, however, they usually fly below 1,000 feet above ground level. Most waterfowl and shorebirds migrate both at night and during the day.

Daytime migration is usually initiated at dawn, peaks around 10 a.m., and declines to a minimum shortly after noon. Birds of prey, several woodpeckers, swallows, bluebirds, blackbirds, ravens, and crow primarily migrate during daylight hours. Wind velocities and directions also influence flight paths. Birds tend to fly with the wind in both spring and fall. Daytime migrants usually fly below 1,000 feet above ground level and often just above tree level.

Threatened and Endangered Species. A letter was sent to the U.S. Fish and Wildlife Service requesting information concerning federally listed species in the MTRs paths (Table 3-4). In Alabama the non-migratory, endangered, red-cockaded woodpecker, the threatened gopher tortoise and inflated heelsplitter plant, and the candidate gopher frog and Wherry's pitcher plant were identified along the route.

Mississippi sensitive species under the MTRs include the endangered bald eagle, the threatened Louisiana black bear, the yellow blotched map turtle, the eastern indigo snake, and the ringed sawback turtle. A small breeding population of Louisiana black bear is known to exist in the Pascagoula River State Wildlife Management Area. All of the species listed for Alabama are also included in Mississippi with exception of the inflated heelsplitter plant.

Louisiana sensitive species within the MTRs include the red-cockaded woodpecker and the endangered Louisiana pearlshell.

3.2.4 Cultural Resources

The physiography and climate of the southeastern United States have supported cultural activity which extend into the past for nearly 8,000 years. Concentrated mostly in the valleys and deltas of major rivers such as the Tennessee and Mississippi, this region has been the setting for cultures with the most complex social and political organizations known to exist north of Mexico. Mississippi and Louisiana, the region of influence for NAS New Orleans, has produced many sites that represent this cultural

Table 3-4. Threatened, Endangered, and Candidate Sensitive Species Within Military Training Routes VR-179 and VR-1196[1]

Common Name	Scientific Name	Status	Alabama[2]	Mississippi[2]									Louisiana[2]			
			WC	FC	GC	GrC	HC	PRC	SC	PC	WiC	JC	GP	NP	RP	VP
Red-cockaded woodpecker	*Picoides borealis*	E	X	X	X	X	X		X	X	X		X	X	X	X
Gopher tortoise	*Gopherus polyphemus*	T	X	X	X	X	X	X	X	X						
Gopher frog	*Rana capito*	C	X	X	X	X	X	X	X	X						
Inflated heelsplitter plant	*Potamilus inflatus*	T	X													
Wherry's pitcher plant	*Sarracenia rubra wherryi*	C	X			X										
Louisiana black bear	*Ursus a. luteolus*	T		X	X	X	X	X	X	X	X					
Yellowblotched map turtle	*Graptemys flavimaculata*	T		X	X	X			X	X						
Eastern indigo snake	*Drymarchon corais couperi*	T		X	X	X	X		X	X						
Maureen's minute moss beetle	*Gymnocthebius*	C			X											
Bald eagle	*Haliaeetus leucocephalus*	E					X									
Ringed sawback turtle	*Graptemys oculifera*	T						X								
Louisiana pearlshell	*Margaritifera hembeli*	E											X		X	
Mississippi sandhill crane	*Grus canadensis pulla*	E										X				

1 List from U.S. Fish and Wildlife correspondence, 1 May 1992.
2 Counties of Alabama, Mississippi, and Parishes of Louisiana as follows:
WC = Washington County (CO)
FC = Forest Co.
GC = George Co.
GrC = Green Co.
HC = Harrison Co.
PRC = Pearl River Co.
SC = Stone Co.
PC = Perry Co.
WiC = Wilkinson Co.
JC = Jackson Co.
GP = Grant Parish (P)
NP = Natchitoches P.
RP = Rapides P.
VP = Vernon P.

sophistication and diversity, and is most noteworthy for the Poverty Point complex, a centralized society which developed in the northern part of Louisiana approximately 3,000 years ago. Sites from the Poverty Point complex most often occur along tributaries of the Mississippi River and where wetland resources are available; sites are characterized by the construction of earthworks (mounds) and the presence of clay baked in various shapes (Jennings, 1978). Later cultures from areas of southeastern and central Louisiana, particularly the Plaquemine complex and later the Natchez, represent direct development from the Poverty Point culture.

Historically, the region of influence was explored by Europeans as early as 1527; Hernando de Soto explored the area in 1540. French exploration followed and a small French fort was established near Phoenix, just southeast of NAS New Orleans, that was occupied until 1715. The city of New Orleans was laid out in 1718 and became the capital of the Louisiana colony in 1722. Ownership of the colony changed back and forth between France and Spain until 1803 when the United States acquired the land as a part of the Louisiana Purchase.

Although the area of NAS New Orleans is believed to have been predominantly swamp or open field during early settlement of southeastern Louisiana, it is located in a region that may potentially contain sites associated with any, or all, of the above described cultures or periods. As such, and in compliance with Sections 106 and 110 of the National Historic Preservation Act, a review of cultural resources in the project area was conducted.

The cultural resource area of potential effect for conversion activities at the NAS New Orleans is defined as any area subject to ground disturbance or structural modification resulting from program activities. Most conversion activities would be conducted on an existing aircraft apron, on land that has been previously disturbed, and as modifications to existing facilities. The Munitions Storage Facility and its accompanying access pavement, however, would be constructed in an approximately 18,000 square foot (0.4 acre), undisturbed, densely forested area southeast of Building 90 (see Figure 2-4). Literature searches and consultation with the Louisiana State Office of Historic Preservation revealed that while three recorded sites (16 PL 40, 16 PL 41, and 16 PL 87) exist near the station boundary, no cultural resources are currently known to exist within the conversion area of potential effect. In addition, there are no historic properties currently listed on, or eligible, for the National Register of Historic Places.

3.2.5 Health and Safety

3.2.5.1 NAS New Orleans. General station safety regulations and emergency response services at NAS New Orleans are administered by the

Navy. The Navy regulations are general in nature to allow for flexibility to cover procedures for the entire station.

Ground Safety. Safety regulations regarding hazardous material spills, which includes the notification of emergency response personnel (e.g., Fire Department and Medical Units), is addressed in the Oil and Hazardous Substance Spill Contingency Plan, Naval Air Station New Orleans, Louisiana, Volumes I and II (Environmental and Safety Design, Inc., 1991). In addition to the in-house organizations and personnel, NAS New Orleans has made arrangements with local emergency organizations (e.g., fire, police, and hospitals) to supplement in-house response expertise (Environmental and Safety Design, Inc., 1991). Safety regulations have been established by the Navy for asbestos identification/removal, ordnance storage, and Air Installation Compatible Use Zones (AICUZ). Facilities to be modified by the Proposed Action have not been surveyed for asbestos.

Specific safety regulations for aircraft maintenance and operations are regulated by each reserve unit's command. The AFRES activities at NAS New Orleans follow safety guidelines in accordance with Occupational Safety and Health Administration and Air Force Occupational Safety and Health regulations.

Aircraft Safety. The Air Force has defined four classifications of mishaps for its aircraft: Classes A, B, C, and High Accident Potentials (HAPS). The mishaps considered most important are of the Class A and Class B types. A Class A mishap is defined as one resulting in one or more of the following: (1) a total cost of $1,000,000 or more for injury, occupational illness, or property damage; (2) a fatality or permanent total disability; (3) the destruction of, or damage beyond economical repair to, an Air Force aircraft. A Class B mishap is defined as resulting in one or more of the following: (1) a total cost of $200,000-$1,000,000 for injury, occupational illness, and property damage or (2) a permanent partial disability or the hospitalization of five or more people. Because there are relatively minor differences in the definitions of Class A and Class B mishaps, it is reasonable to combine them into a single classification for comparative purposes. These will be referred to here as Class A/B mishaps. Although mishaps classified in the Class C and HAPS categories generally occur more frequently than Class A/B mishaps, the Class C and HAPS mishaps are considered less important because they involve only relatively minor damage costs.

The Class A/B mishap rates for the A-10, based on observed data from 1985 to 1989, is 2.7 mishaps per 100,000 flying hours (Murone, 1991).

3.2.5.2 Military Training Routes. The primary concern with regard to low-level flights is mid-air collisions with other aircraft, collisions with objects (e.g., towers or buildings), bird-aircraft collisions, and the potential for the use of flares to cause fires.

Fire Safety. The fire season in the southeastern United States is mainly in the spring, with some increase in fire potential in early fall. The areas most susceptible to fires are forest land underlying the MTRs, such as the DeSoto National Forest. The Air Force has established minimum altitude of release for each type of flare to ensure complete burning before contact with the ground. Procedures are also established to increase the altitude of release during fire season or dry periods so that the flare has time to cool prior to impacting the earth, preventing residual heat from igniting dry tinder.

Aircraft Mishaps. Obstructions to flight, including transmission lines and towers, represent concerns for aircrews using the MTRs. All aircrews are briefed and familiarized with potential obstructions along the route before undertaking a mission. In addition, the Flight Publication and aeronautical charts identify the location of the hazard and avoidance (e.g., vertical and/or horizontal separation) procedures.

Mid-air collisions between private and military aircraft represent a concern since civil aircraft activity is increasing. Mid-air collisions among military aircraft also forms a concern, since several MTRs intersect VR-179 and VR-1196. Safety records for these MTRs indicate that no near misses or collisions have occurred since 1980 (the year records began to be compiled), and existing safety procedures operate well to prevent near-misses.

Bird-aircraft collisions present a hazard to aircraft using the MTRs. There were 12 bird-aircraft collisions from 1985 through 1991 on VR-179 and 1 on VR-1196. Given the amount of miles flown on these routes this equals approximately 1 bird strike for every 53,700 miles traveled on VR-179 and 426,800 miles on VR-1196.

3.2.6 Hazardous Materials/Waste Management

In the process of maintaining and repairing aircraft and vehicles, the reserve units at NAS New Orleans generate and use a variety of hazardous materials. These include solvents, waste engine oils, paints and thinners, detergents, lubricating oils, and JP-5 jet fuel. As hazardous waste is generated by the reserve units, they are segregated, placed in steel containers, sealed, labeled, and moved to a temporary hazardous waste storage facility which is operated by NAS New Orleans. This station generates over 2,200 pounds of hazardous waste per month (Department of the Navy, 1989). NAS New Orleans is required to remove drums of waste off-station to a treatment, storage, or disposal facility within 90 days of the accumulation date marked on the collection container. Removal of hazardous waste is conducted by the Defense Reutilization and Marketing Office.

A variety of fuels and oils are used and stored at NAS New Orleans. The most abundant is JP-5 jet fuel which is stored in 7 storage tanks with a combined capacity of 1,433,400 gallons.

NAS New Orleans has developed methods for containment, storage, visual inspection, preventive maintenance, housekeeping, material compatibility, security, monitoring, transportation, and disposal of hazardous materials/waste in the NAS New Orleans Instruction 5090.1, Hazardous Waste Management Plan (Department of the Navy, 1989). This plan implements Navy policy regarding compliance with federal, state, and local environmental protection laws, and regulations pertaining to hazardous waste management. Spill control of hazardous materials is addressed in detail in the NAS New Orleans Oil and Hazardous Substance Spill Contingency Plan, (Environmental and Safety Design, Inc., 1991).

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, (Public Law 96-510), as amended, the DOD has initiated an Installation Restoration Program (IRP) to investigate any environmental contamination present at DOD facilities. Initial investigation at NAS New Orleans was under the Navy Assessment and Control of Installation Pollutants Program (NACIP) (Naval Energy and Environmental Support Activity, 1985). This program used a three-phase approach to manage past disposal sites at Naval Facilities. The NACIP was revised and is being continued under the IRP, which is a five task program similar to the U.S. Environmental Protection Agency Superfund Program, Remedial Investigation/ Feasibility Study process.

NAS New Orleans has completed task two, Site Inspection Study (ECOTECH, Inc., 1989). This study lists seven sites on NAS New Orleans which are being considered for further study under the IRP. None of these sites are located near areas proposed for construction under the conversion.

3.2.7 Infrastructure

Major utilities are supplied to NAS New Orleans by contract agreements with local public utility companies.

Electrical power is provided by Louisiana Power and Light. Power is delivered to the station by two circuits, one normal and one alternate. The incoming circuits into the station are loaded to 57 percent of capacity during peak demand, leaving an excess capacity of 43 percent for future growth. Currently, the government owned system on the station is in good condition (Naval Facilities Engineering Command, 1988).

Natural gas to NAS New Orleans is supplied by Louisiana Gas Service Company for an annual consumption of 200 million cubic feet per year. Consumption on the station is approximately 40 million cubic feet per year.

Currently there are no deficiencies in the gas distribution system on the station.

Potable water is supplied from the Belle Chasse water district. The water district has a capacity of 5 million gallons per day (MGD) and plans to increase capacity to 7.5 MGD. Average daily demand is about 2.4 MGD. The water system and storage capabilities on the station are adequate for existing and future facilities.

Sewage generation at NAS New Orleans is treated at the municipal plant under agreement with Plaquemines Parish Water and Sewer District. The municipal sewer plant has a capacity of 3 MGD; average daily demand is estimated at 1.64 MGD. The plant was upgraded in 1986 to allow expanded capacity based on projected demand increases over the next 10 years. The facilities on station are adequate for future growth (Naval Facilities Engineering Command, 1988).

Solid waste on NAS New Orleans is collected by a private contractor and transported for disposal into landfills in Saint Bernard Parish or Abbendale, Louisiana. Both landfills have a remaining life expectancy of over 20 years (Naval Facilities Engineering Command, 1988).

The major ground transportation route to NAS New Orleans is Highway 23. Highway 23 provides access to both entrance gates to the station. The level of service on Highway 23, around the station, is listed as A (extremely favorable progression with little delay) or B (good progression and stable flow with occasional delays). Two gates provide access to the station, the main gate off Highway 23 south of Belle Chasse, and the rear gate which connects with Barriere Road and Highway 23 northeast of the station. Both gates experience minor delays for approximately a 15-minute period during the morning and afternoon rush hours.

3.2.8 Land Use

3.2.8.1 NAS New Orleans. NAS New Orleans is located on 3,400 acres of land near the city of Belle Chasse. The land use surrounding the station ranges from residential to commercial to industrial (see Section 3.2.9, Figure 3-1). Between the station and the Intracoastal Waterway to the north, property is zoned agricultural, and is mostly vacant with the exception of some industrial uses at the northeast corner along the waterway.

To the north and east of the station is the city of Belle Chasse, an urbanized area stretching along Highway 23 from the Jefferson Parish-Plaquemines Parish line southward past the station's main gate. Belle Chasse consists of single family residences, mobile homes, apartments, churches, schools, small community-oriented businesses, and some heavy industrial uses, such

as petroleum, chemical, and shipping firms. The residential development immediately east of the station near the main gate is known as the Concession Community. The Lake Park subdivision is located north of the station (Naval Facilities Engineering Command, 1988).

To the south of the station is the Stella Oil and Gas Field. Bayou Barriere forms a large portion of the northwestern boundary. Lying immediately beyond the bayou is the Intracoastal Waterway. An industrial area has developed recently on the northwestern bank of the waterway extending along both sides of Engineers Road which runs parallel to the waterway.

Land use on NAS New Orleans is divided into 10 categories. Operational and Training, and Open Space, comprise the greatest areas on the station. Operational and training, located on the western portion of the station, consist of airfield runways, taxiways, parking aprons, aircraft maintenance operations, and buffer spaces associated with primary surfaces and clear zones. Open space consists of semi-improved or unimproved lands, and is used for conservation of buffer zones. The remaining land uses consist of supply/storage, community support, maintenance/production, housing, medical, administration, utilities, and ordnance (Naval Facilities Engineering Command, 1988).

Existing land uses on NAS New Orleans, in the noise contours above 65 dB that are considered incompatible, include housing in Bachelors Enlisted Quarters 21 and 22, and the training class room in Building 20.

3.2.8.2 Military Training Routes. The land use area affected by operations within the MTRs VR-1196 and VR-179 consists of those lands directly beneath them (see Figures 2-1 and 2-2). Thus, the land use area described corresponds directly to the ground level length and width of these MTR corridors. The land use attributes for the areas underneath the MTRs include land ownership and sensitive land uses.

Land ownership allows a categorical description of land based on the type of owner. The principle land owner categories included for this analysis are federal, state, county or parish and private land. Federal and state land ownership patterns in the vicinity or under the MTRs include the U.S Forest Service, U.S. Fish and Wildlife Service, National Forest Service, and National Park Service; and the states of Alabama, Louisiana, and Mississippi. The predominant land ownership beneath the MTRs is private.

Land use underneath the corridors is predominantly rural with smaller areas of agriculture and timber production. Other than several small towns, there are no large urban areas beneath the MTRs.

Sensitive land uses are areas of high environmental importance and concern; or areas reserved for specific public activities such as recreation and

camping. Sensitive land uses located beneath the MTRs include National Forest Land, National Wildlife Management Preserves, State Wildlife Management Areas, County Wildlife Management Areas, and Recreational Areas (Tables 3-5 and 3-6). There are no Wilderness Study Areas or wilderness Areas in the areas located beneath the MTRs.

Table 3-5. Potentially Sensitive Lands Under VR-179

Land Area	Use	Location
Pascagoula River State Wildlife Management Area	Wildlife Management, Recreation, Camping, Hunting	Jackson and George counties, Mississippi
Leaf River State Wildlife Management Area	Wildlife Management, Recreation, Camping, Hunting	Perry County, Mississippi
Boykan State Wildlife Management Area	Wildlife Management, Recreation, Camping, Fishing, Hunting	Washington and Mobile counties, Alabama
Mississippi Sandhill Crane National Wildlife Management Area	Wildlife Management	Jackson County, Mississippi
Shepard State Park	Recreation, Camping	Jackson County, Mississippi

Table 3-6. Potentially Sensitive Lands Under VR-1196

Land Area	Use	Location
De Soto National Forest	Recreation, Camping, Hunting, Fishing, Timber Production	Forest, George, Greene, Pearl River, Perry, and Stone counties, Mississippi
Grassy Lake State Wildlife Management Area	Wildlife Management, Recreation, Camping, Hunting, Fishing	Concordia Parish, Louisiana
Leaf River State Wildlife Management Area	Wildlife Management, Recreation, Camping, Hunting	Perry County, Mississippi
Three Rivers State Wildlife Management Area	Wildlife Management, Recreation, Camping, Fishing, Hunting	Concordia Parish, Louisiana
Flint Creek Water Park	Recreation, Camping, Fishing	Stone County, Mississippi
Wolf River Game Management Area	Wildlife Management, Recreation, Fishing, Hunting	Lamar, Marion, and Pearl River counties, Mississippi

3.2.9 Noise

3.2.9.1 NAS New Orleans. Major sources of aircraft noise at NAS New Orleans include Louisiana Air National Guard operations with the F-15 aircraft, AFRES operations with the A-10, Navy operations with the P-3 and F-18, and transient military aircraft.

Air Installation Facilities. The air installation facilities at NAS New Orleans consist of two runways constructed in an L-shaped configuration along the station's northwestern and southwestern boundaries. Runway 04/22 is 8,000 feet long and is the primary runway at the air station accounting for approximately 94 percent of all aircraft operations. Runway 04/22 is situated in a northeast-southwest direction and lies approximately parallel to the Intracoastal Waterway to the west and Highway 23 to the east.

Runway 14/32 is 6,000 feet long and is the crosswind runway at the installation accounting for approximately 6 percent of all operations. Runway 14/32 is perpendicular to Runway 04/22 and lies approximately parallel to the station's southwestern boundary.

The Aircraft Operations Building/Control Tower is located near the 04 end of Runway 04/22 and near the 14 end of Runway 14/32. Other prominent structures along the Runway 04/22 flight line include the Operational Flight Trainer Building, the Fire/Rescue Station, the Aircraft Intermediate Maintenance Department headquarters in Hangar 3, the Navy and Marine Corps Hangar, the AFRES Hangar, the Louisiana Air National Guard Hangar, and several smaller structures associated with these operations.

Extending from the Air Operations Building/Control Tower southeastward along Runway 14/32 are several other prominent structures: the U.S. Customs Hangar, the Flying Club Building, the Coast Guard Hangar, and the Coast Guard Administration Building. The Jet Engine Test Stand is located on the eastern side of Runway 14/32.

Flight operations at NAS New Orleans include fixed- and rotary-wing arrivals, departures, and patterns such as touch-and-go, field carrier landing practice, and ground-controlled approach. Both pre-flight and maintenance runups are conducted at the station. Most of the test engine runups are for maintenance. They include both in-frame and out-of-frame operations.

The tower is manned 24 hours a day. Published field hours of operation are 7 a.m. to 11 p.m.

Aircraft Operations. Military units operating aircraft at NAS New Orleans include the Navy, Marines, AFRES, Louisiana Air National Guard, and the Coast Guard. Other nonmilitary organizations operating aircraft include the U.S. Customs Service, the Civil Air Patrol, and the NAS New Orleans Flying

Club (a local group providing recreational flight training and services). Listed in Table 3-7 are the various units operating aircraft at NAS New Orleans, the type of aircraft operated, and the number of aircraft operated.

Table 3-7. Assigned Aircraft - NAS New Orleans

Unit	Type	Number
Patrol Squadron Nine Four	P-3	9
Attack Squadron Two Zero Four	F-18	13
Marine Aircraft Group Four Six, Detachment Bravo	UH-1N	13
926th Fighter Group, U.S. Air Force Reserve	A-10A	18
159th Fighter Group, Louisiana Air National Guard	F-15	26
	C-131	1
Chief of Naval Reserve	T-39	2
NAS New Orleans	C-12	1
Fourth Marine Air Wing	C-12	2
U.S. Coast Guard	H-65	6
Flying Club	Cessna	4
Civil Air Patrol	Cessna	1
U.S. Customs	Cessna	1
	Cheyenne	1
	C-12	1
	PA-31	3
	UH-60	2
	UH-1M	1

Five aircraft types at NAS New Orleans were determined to dominate the aircraft noise environment, and were modelled. They were the F-18, F-15, A-10, P-3, and transient aircraft. The remaining types of aircraft were judged not to have a significant impact upon noise levels at the station and were not modeled. These included helicopters and civil single- and twin-engine piston aircraft operations.

The aircraft types for transient operations could not be determined from available air traffic control data. However, tower personnel estimated that 75 percent of all transient operations were conducted by T-37 and T-38 aircraft. Transient operations were modeled as equally split between T-37 and T-38 aircraft.

A large number of civilian one-engine piston and two-engine piston aircraft also operate in the vicinity of NAS New Orleans. Many of these aircraft are a part of a seaplane service which lands on the nearby Intracoastal Waterway which is not considered in modelling for the acoustic environment of the facility.

The total number of aircraft operations at NAS New Orleans in 1986 was estimated as being 160,350. These reported numbers are outdated with regard to the operations assigned to A-10 aircraft. Discussions with AFRES operations personnel (Durio, 1991) determined the current number of A-10 operations to be 2,500 sorties and an additional 500 low-level approaches. Table 3-8 presents the revised baseline operating conditions with the revised A-10 operational data. Military operations totaled 108,360 and civil operations totaled 47,827 for a 1991 total of 156,187.

Table 3-8. 1991 Aircraft Operations by Category and Aircraft Type**

Military Operations	Amount
F-18	17,929
F-15	23,922
A-10	6,000*
P-3	13,469
Transient	39,040
Helicopters	8,000
Total	108,360
Civil Operations	
Single-Engine Piston	11,957
Twin-Engine	11,957
Overflights	23,913
Total	47,827
Total	156,187

Source: Aircraft Noise Survey, Naval Air Station, New Orleans, Louisiana, August 1988, Harris Miller, Miller & Hanson, Inc., HMMH Report No. 270133. (Revised per February 9, 1990, memorandum addressing A-7 to F-18 conversion).

* A-10 operations revised per NAS New Orleans, AFRES (Durio, 1991).

** An aircraft operation counts as one event, such as a take-off or a landing. A touch and go or low level approach counts as two operations, one arrival and one departure operation

For all operations, Runway 04 was the most often used runway in 1986 with 76 percent of all operations. Runway 22 accounted for 18 percent of all operations, followed by Runway 32 at 4 percent and Runway 14 at 2 percent.

Single-Event Analysis. Table 3-9 lists 11 noise-sensitive receptor locations in the vicinity of NAS New Orleans. The noisiest operations of the A-10s, which are to be replaced, and the noisiest overall operation of all other modelled aircraft (e.g., F-18s, F-15s, P-3s, T-37s, and T 38s) were then determined for each of the locations. In this analysis, the sound exposure level (SEL) was calculated for the aforementioned aircraft for each receptor location during the noisiest flyover (see Table 3-9). Single-event noise level predictions for the modelled aircraft were made using the NOISEMAP computer code. The SEL measure is an integration of the A-weighted sound pressure level over the time interval of a single event (such as an aircraft flyover), corrected to the equivalent level for a reference period of 1 second. Single-event predictions are useful in comparing the noise levels from alternative aircraft at a given receptor for various flyovers; however, human impacts cannot be assessed on the basis of single events alone.

Table 3-9. Estimated Sound Exposure Levels for Receptor Locations near NAS New Orleans for Existing Condition

	Estimated SEL (dB)	
Location	Existing Noisiest	A-10
Augusta	101	76
Promised Land	103	79
Trailer Park between Harvey Canal and Murphy Canal	103	74
School near Highway 23 and Sea Train Terminal	102	86
Belle Chasse Church	105	88
Belle Chasse Residential	105	99
Belle Chasse State School	95	89
Cox School	92	70
Visitation School	88	77
Hope Haven Institute	87	71
McDonoghville No. 27 School	91	81

Table 3-9 presents a comparison of the maximum SELs for the A-10s and the overall maximum SEL for all other aircraft modelled at the 11 sensitive receptors. The noise levels produced by A-10 operations are much lower than the noisiest aircraft currently operating at the base.

Noise Modelling Methodology. Noise contours representing existing (baseline) conditions in the vicinity of NAS New Orleans were prepared using the NOISEMAP version 6.1 model and methodology. The resulting noise exposure estimates are expressed in terms of the day-night average

sound level (DNL). DNL is the 24-hour average A-weighted sound level, obtained after addition of 10 dB to sound levels occurring during the night (from 10 p.m. to 7 a.m.). NOISEMAP predictions were made on a 100 x 100 grid (1,000-ft spacing) centered on NAS New Orleans.

The NOISEMAP methodology takes into account the effect of aircraft single events (source acoustic power, altitudes, and air speeds), the number of times such events occur during a 24-hour period, and the time of day that they occur. Table 3-10 presents the operating conditions used to model the baseline (existing) environment. NOISEMAP uses the following flight data: aircraft type, flight profiles (including power settings and speed schedules), flight track locations, number of operations per track, runway utilization schedules, and ground runup (testing) data. Standardized flight data for each aircraft are contained within the NOISEMAP computer code. This standardization of flight profiles simplifies the user input for NOISEMAP. Appendix C describes the DNL methodology as it relates to NOISEMAP.

Figure 3-1 shows the layout of the airfield and the land uses in the surrounding communities. The noise contours generated from the NOISEMAP model for the current level of activity at NAS New Orleans as of January 1990 are presented in Figure 3-2. These contours show the effects of the aircraft that were determined to be major sources of noise (i.e., F-15s, F-18s, P-3s, A-10s, and military transient aircraft).

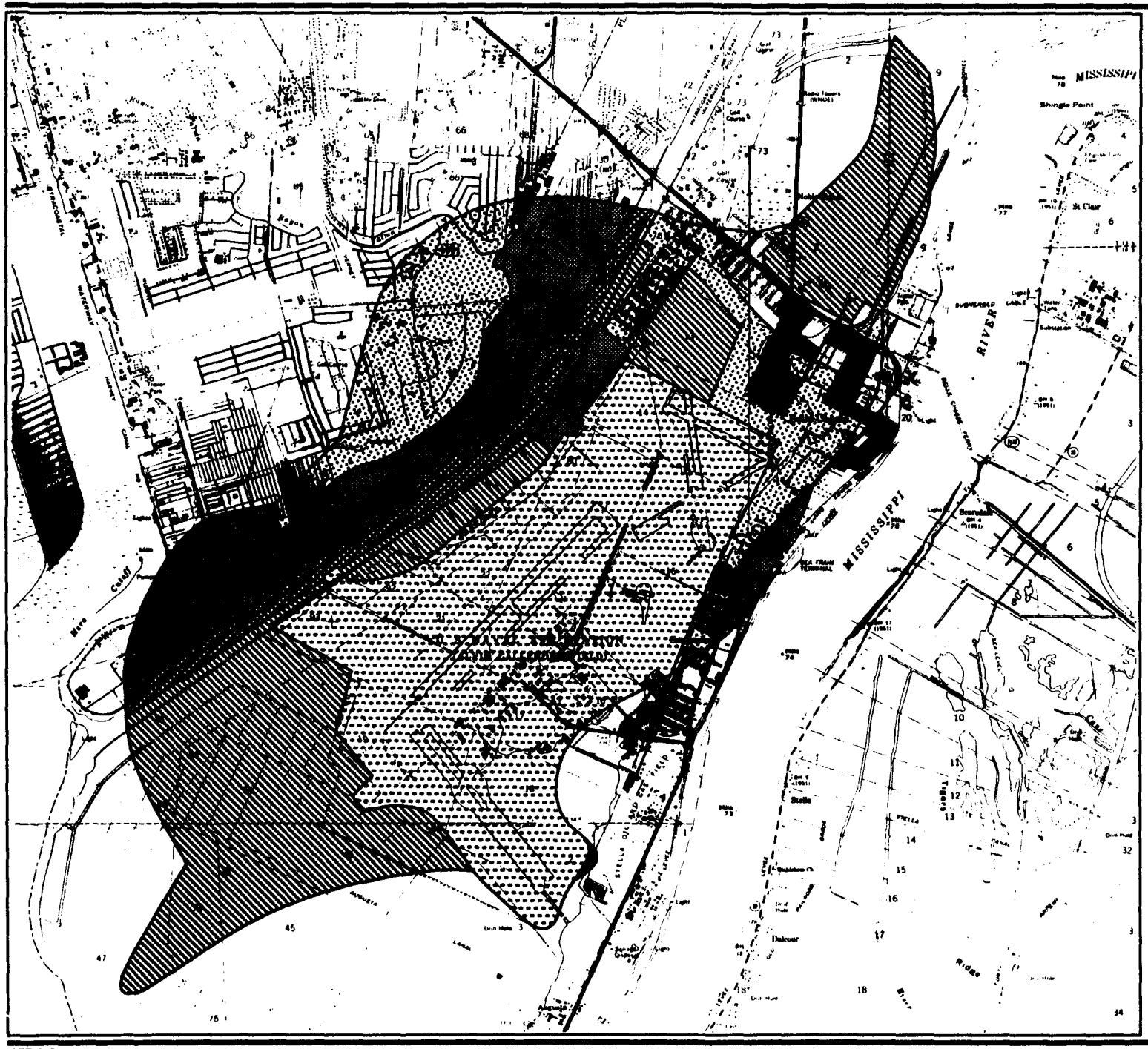
Noise Abatement Procedures. One operational change has been instituted at NAS New Orleans to accommodate residents of Belle Chasse. The most heavily populated area of the community is located to the right of the departure end of Runway 04. Aircraft departing Runway 04 are instructed to head straight out to 2,000 feet in altitude or to a point four nautical miles beyond the runway before bearing right. This measure avoids flying over the central portion of Belle Chasse.

History of Noise Complaints. The noise complaint log for air operations at NAS New Orleans for the period January 1, 1985, through April 30, 1987, shows a total of 20 complaints received. Five of the complainants lived in the Algiers section of New Orleans; two complainants were from an area of Jefferson Parish across Bayou Barataria northwest of the station; two complainants were from an area south of the station near Oakville; two were from Chalmette; and one complainant each was from Scarsdale (directly across the Mississippi River from Belle Chasse), from the University District of New Orleans, from the New Orleans Lakefront area, and from Lafitte, south of NAS New Orleans in Jefferson Parish. The remainder of the complainants lived in other Louisiana communities outside the New Orleans area: two complainants from Houma and one complainant each from New Iberia, Amite, and Angie.

Table 3-10. Modelled Daily Operations by Flight Track for Baseline Operating Condition

		F-18		F-15		A-10		P-3		T-37		T-38	
R/W	No.	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
04	D1	4.53	–	–	–	–	–	–	–	–	–	–	–
	D2	–	–	5.24	–	–	–	–	–	–	–	–	–
	D3	–	–	1.31	–	–	–	–	–	–	–	–	–
	D4	–	–	–	–	3.00	–	–	–	–	–	–	–
	D5	–	–	–	–	1.00	0.38	–	–	–	–	–	–
	D6	–	–	–	–	1.00	0.10	–	–	–	–	–	–
	D7	–	–	–	–	–	–	1.75	–	–	–	–	–
	D8	–	–	–	–	–	–	1.75	–	–	–	–	–
	D9	–	–	–	–	–	–	–	–	5.02	–	5.02	–
	A1	–	–	0.13	–	0.66	0.10	0.35	–	–	–	–	–
	A2	–	–	0.52	–	1.60	0.38	3.15	–	5.02	–	5.02	–
	A3	4.53	–	5.90	–	2.74	–	–	–	–	–	–	–
	P1	13.48	–	18.78	–	1.00	–	8.38	–	–	–	–	–
	P2	1.36	–	0.88	–	0.08	0.02	2.10	–	15.04	–	15.04	–
22	D1	1.13	–	–	–	–	–	–	–	–	–	–	–
	D2	–	–	0.33	–	–	–	–	–	–	–	–	–
	D3	–	–	1.31	–	–	–	–	–	–	–	–	–
	D4	–	–	–	–	0.76	–	–	–	–	–	–	–
	D5	–	–	–	–	0.24	0.10	–	–	–	–	–	–
	D6	–	–	–	–	0.24	0.02	–	–	–	–	–	–
	D7	–	–	–	–	–	–	0.47	–	–	–	–	–
	D8	–	–	–	–	–	–	0.46	–	–	–	–	–
	D9	–	–	–	–	–	–	-	–	1.01	–	1.01	–
	A1	–	–	0.03	–	0.16	0.02	0.09	–	–	–	–	–
	A2	–	–	0.13	–	0.40	0.08	0.84	–	1.01	–	1.01	–
	A3	1.13	–	1.48	–	0.68	–	–	–	–	–	–	–
	P1	3.72	–	4.70	–	0.26	–	2.23	–	–	–	–	–
	P2	0.34	–	0.22	–	0.02	0.00	0.56	–	3.01	–	3.01	–
14	D1	–	–	–	–	–	–	0.19	–	1.07	–	1.07	–
	A1	–	–	–	–	–	–	0.19	–	1.07	–	1.07	–
	P1	–	–	–	–	–	–	–	–	–	–	–	–
32	D1	–	–	–	–	–	–	0.14	–	0.40	–	0.40	–
	A1	–	–	–	–	–	–	0.14	–	0.40	–	0.40	–
	P1	–	–	–	–	–	–	0.34	–	–	–	–	–
	P2	–	–	–	–	–	–	0.08	–	1.21	–	1.21	–
	Daily*	49.12	0.0	65.54	0.00	15.2	1.20	36.90	0.00	53.48	0.00	53.48	0.00
	Annual*	17,929		23,922		5,986		13,469		19,520		19,520	

* Note: Pattern operations counted as two operations in totals
Numbers in table are rounded
A = Arrival Track
D = Departure Track
P = Pattern Track



Land Use within the 65dB Contour

Naval Air Station
New Orleans,
Louisiana

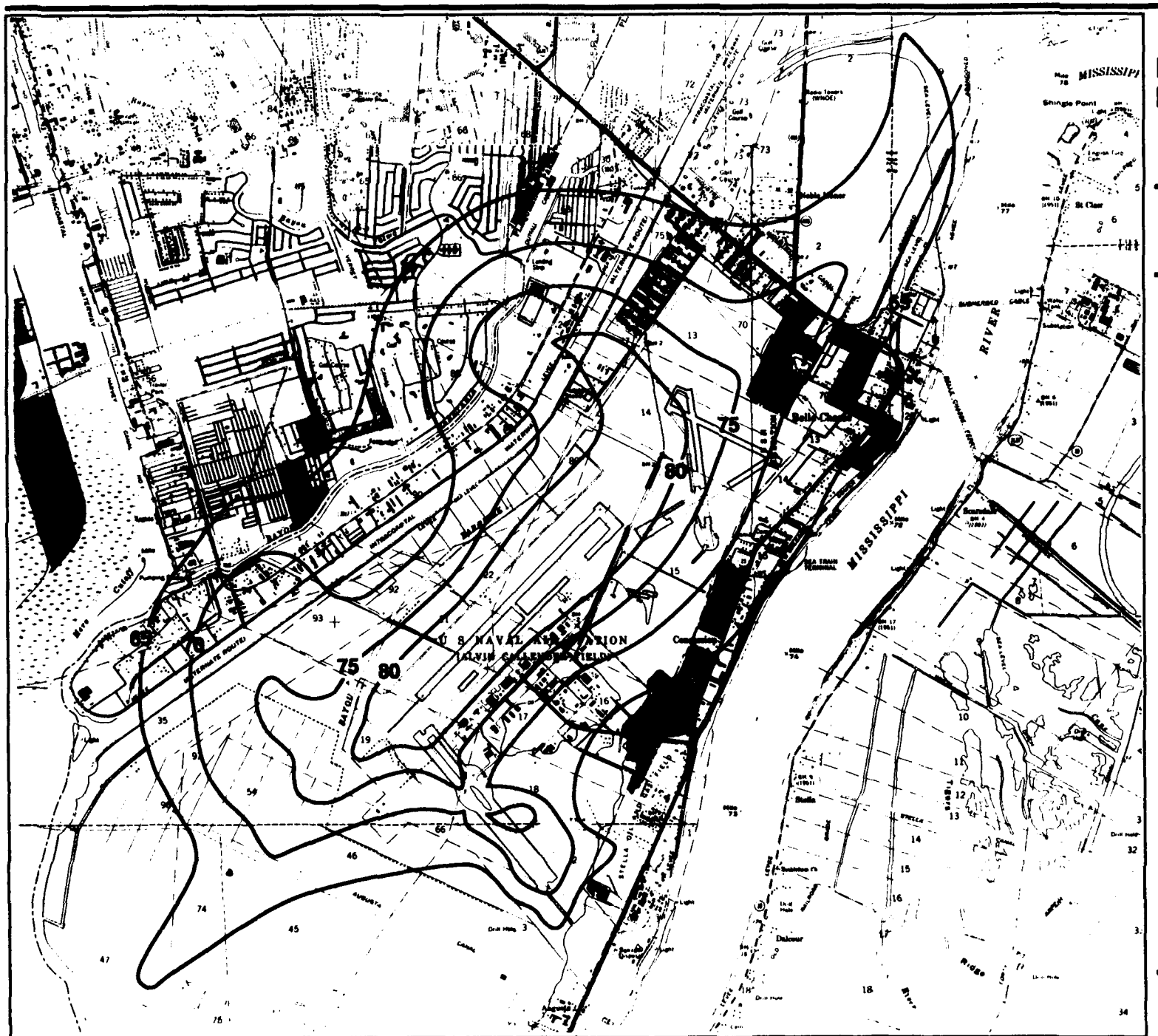
EXPLANATION

- Residential
- Mixed Uses
- Industrial
- Undeveloped
- Intracoastal Waterway
- Naval Air Station

0 1000 3000 4500 Feet

Figure 3-1

AFR/013



Baseline Noise Contours

Naval Air Station
New Orleans,
Louisiana

Figure 3-2

AFR/010

None of the complaints originated from persons residing within the 1987 AICUZ composite footprint. However, the five complaints originating in Algiers and two complaints originating in Chalmette likely concerned NAS New Orleans aircraft approaching or departing Runway 04/22.

Most of the complaints (13) concerned low-flying, fixed-wing aircraft, while the remainder concerned low-flying helicopters, unusual or atypical flight patterns, sonic booms, or other loud noises.

Several of the complaints may have involved aircraft from other military installations or perhaps, in the cases of the loud noise, may have resulted from non-aircraft sources, such as oil exploration activities.

Noise complaints received from civilian communities are of concern to military authorities. A total of 20 complaints within a 28-month period indicates relatively few noise conflicts with local residents, especially in view of the approximately 253,000 military air operations conducted within the 28-month period and the number of people residing within the NAS New Orleans area of operations.

3.2.9.2 Military Training Routes. Military training operations involving high-speed, low-level flights are routinely carried out by all of the flight operation commands. Aircraft involved in such operations fly at subsonic speeds. Operations of this type are conducted on specially designated MTRs. Two such MTRs are VR-1196 and VR-179 which are used by the aircraft operating from NAS New Orleans, England AFB, Meridian, and others.

ROUTEMAP is an Air Force developed computer program used to model the noise impact of MTRs (Lucas & Plotkin, 1988). For the purposes of modeling within ROUTEMAP, one sortie is considered as one pass along the MTR and therefore one noise event. The current operations for VR-1196 and VR-179 are listed in Table 3-11. All operations were modeled as occurring during the daytime hours of 7 a.m. to 10 p.m. The sorties were modeled as flying along multiple scattered tracks about the MTR centerline with a standard deviation of 2.5 statute miles.

The day-night average sound level metric (L_{dnmr}) is the noise metric developed to assess the noise impact of MTR's in terms of the probability of high annoyance in the general population. Impact is assessed by using L_{dnmr} as an equivalent to DNL (Plotkin, et.al., 1987) and using the existing relation between DNL and annoyance shown in Figure 3-3.

The highest L_{dnmr} occurs along the ground track directly below the centerline of the MTR. The highest L_{dnmr} for current operations are 46 dB for VR-1196 and 50 dB for VR-179. The levels predicted by ROUTEMAP are presented in Table 3-12 for various distances from MTR centerline.

Community Noise Annoyance Curves

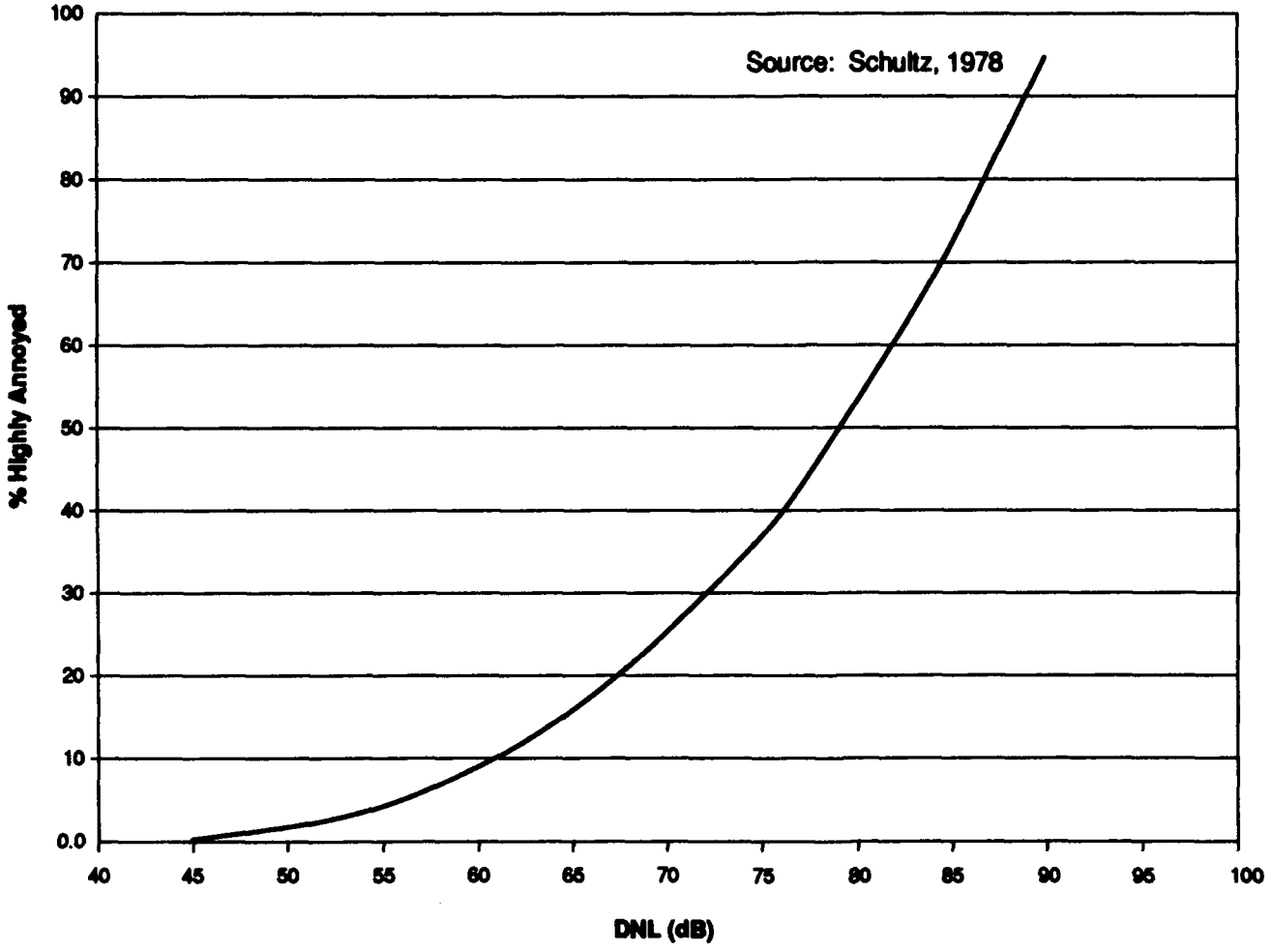


Figure 3-3

AFR/118

Table 3-11. Current Average Monthly Aircraft Sorties

Aircraft Type	Current VR-1196 Operations	Current VR-179 Operations
A-10	4	10
A-4	4	2
T-38	2	2
A-6	2	2
AV-8	4	4
F-15E	4	14
F-16	4	14
F-18	2	4

Table 3-12. L_{dnmr} in dB at Distances Perpendicular to MTR Centerline for Current Operations

Distance from Centerline (feet)	VR-1196 L_{dnmr} (dB)	VR-179 L_{dnmr} (dB)
On Centerline	46	50
5,000	46	50
10,000	45	49
15,000	43	48
20,000	41	45
25,000	38	43
30,000	35	39
35,000	31	35

The highest L_{dnmr} for current operations correspond to annoyances of 1.3 percent and 2.1 percent for VR-1196 and VR-179, respectively. The community noise annoyance curve describes the relationship of DNL to annoyance for a standard population as a whole. The relation does not address the response of individuals who may experience greater or lesser annoyance than the population as a whole (Schultz, 1978).

Land use compatibility guidelines based on L_{dnmr} have not been developed; however, assuming the above equivalence, the DNL guidelines shown in Section 4.8 could be used as approximate guidelines. L_{dnmr} did not exceed 65 dB in either MTR for the current operations. The DNL guidelines designate DNL below 65 dB as being considered compatible with all land uses.

3.2.10 Socioeconomics

NAS New Orleans is located in Plaquemines Parish, just outside of the New Orleans Metropolitan Statistical Area (MSA). In 1990, Plaquemines Parish had a population of approximately 25,500 and the New Orleans MSA had a population of approximately 1.2 million (Bureau of the Census, 1990). Both of these 1990 population numbers represent a 1 percent decrease in population from 1980. Belle Chasse is the closest city to NAS New Orleans and in 1980 had a population of approximately 10,000. The current active station population is an estimated 3,074 persons. Of that total, 1,136 persons, or 43 percent, are active duty military. Civilian personnel are estimated at 1,288, with 562 of the civilians listed as on-station dependents (Naval Facilities Engineering Command, 1988). The annual budget (e.g., payroll and purchasing) for NAS New Orleans and its reserve units is approximately $97 million excluding the U.S. Coast Guard and U.S. Customs Service.

3.2.11 Water Resources

3.2.11.1 NAS New Orleans. NAS New Orleans is situated on the natural levee of the Mississippi River. Drainage at the station is accomplished by a series of open ditches and canals. The two most prominent canals are Concord Canal, which drains the eastern portion of the station, and Railroad Canal, which drains the western portion. The on-station system drains into Bayou Barriere which forms much of the northwestern boundary of the station. From there, the runoff is transferred by pumps into the Intracoastal Waterway which connects to the Mississippi River below the New Orleans Central Business District. Once in the Mississippi River, the discharge flows down to the Gulf of Mexico.

The elevation of NAS New Orleans ranges from 3 feet above mean sea level to 2 feet below sea level. A flood plain is recognized as all areas at 0 feet elevation and below. However, the station is protected from flooding by levees constructed adjacent to the Mississippi River and the Intracoastal Waterway. This protection generally allows construction in areas below 0 feet elevation. In periods of heavy rainfall (e.g., hurricanes and severe storms), flooding can occur because of the inability of the pumping system to remove water quickly from areas within the levees to the drainage canals beyond the levees (Naval Facilities Engineering Command, 1988).

The station currently has two National Pollution Discharge Elimination System permits for a P-3 wash rack and the station water tower.

3.2.11.2 Military Training Routes. VR-179 and VR-1196 are located in the states of Alabama, Louisiana, and Mississippi. Because of the relatively wet climate in the southeastern United States, these MTRs cross many rivers and streams. Major water resources underneath the MTRs include the

Mississippi River, Pascagoula River, and Flint Creek Water Park in the state of Mississippi, and Bogue Chitto River in the state of Louisiana. In addition, part of VR-179 is over the Gulf of Mexico.

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4.0 ENVIRONMENTAL CONSEQUENCES

This section presents the results of the analysis of potential environmental effects of implementing the proposed aircraft conversion and the No-Action alternative. Changes to the natural and human environments that may result from the Proposed Action and No-Action Alternative were evaluated relative to the affected environment as described in Section 3.0. Anticipated direct and indirect effects were assessed quantitatively and qualitatively for each environmental component, considering both short-term (construction related) and long-term (operations related) project effects. The potential for significant environmental consequences was evaluated utilizing the context and intensity considerations as defined in CEQ regulations for implementing the procedural provisions of NEPA (40 CFR 1508.27).

Cumulative impacts result from "the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (Council on Environmental Quality, 1978). Other known projects in the area that could contribute to cumulative impacts are the construction of the C-131 hangar located near Runway 14/32 and an ordnance facility to be constructed across from Building 90 during approximately the same time period as the Proposed Action construction.

4.1 AIR QUALITY

4.1.1 NAS New Orleans

Annual emissions of priority pollutants expected to be produced after conversion to the F-16 have been compared to emissions from the A-10 to evaluate potential impacts of the Proposed Action. At NAS New Orleans, the current 18 A-10 aircraft fly approximately 2,500 sorties and perform 500 low-level approaches annually. The proposed 18 F-16 aircraft would fly approximately 3,000 sorties and perform 400 touch and go landings annually. Emissions associated with these operations have been calculated using the methodology and data from Seitchek (1985). Emissions associated with other aircraft assigned to NAS New Orleans, as well as transient aircraft using this station, were not evaluated since these are independent of the proposed conversion and hence would not alter the annual net change.

Table 4-1 provides a summary of emissions associated with the existing A-10, and proposed F-16 operations, and the net change in emissions resulting from the Proposed Action for each priority pollutant based on the

Table 4-1. Comparison of Annual Emissions for the A-10 and F-16 at NAS New Orleans

Aircraft	Annual Operations		Carbon Monoxide	Hydrocarbons	Nitrogen Dioxide	Total Suspended Particulates	Sulfur Dioxide
A-10	Landing and Take-Off: 2500	(lbs)	110,230	32,518	8,267	66	1,819
	Touch and Go: 500	(lbs)	959	69	1,058	4	143
	A-10 Totals	(lbs)	111,189	32,587	9,325	71	1,962
		(tons)	55.6	16.3	4.7	0.04	1.0
F-16	Landing and Take-Off: 3000	(lbs)	65,477	8,598	21,165	509	3,241
	Touch and Go: 400	(lbs)	159	45	1,058	17	55
	F-16 Totals	(lbs)	65,635	8,643	22,222	526	3,296
		(tons)	32.8	4.3	11.1	0.3	1.6
Annual Net Change		(lbs)	(45,554)	(23,944)	12,897	455	1,334
		(tons)	(22.8)	(12.0)	6.4	0.3	0.6

Note: Values in parenthesis are negative (i.e., a net reduction in emissions). A-10 Touch and Go are low-level approaches.

annual sortie rate data. Considerable reductions in the emissions of both carbon monoxide (CO) and total hydrocarbons (HC) are associated with the proposed conversion. Increases in annual emissions of the remaining pollutants (NO_x, total suspended particulates, and SO_x) arising from the proposed conversion are much smaller.

Table 3-1 provides a summary of air quality in the area of NAS New Orleans. Based upon this data, the only pollutant with ambient concentrations exceeding National Ambient Air Quality Standards is ozone; however, the region around the station is in attainment status for ozone since the exceedance occurred during only one hourly averaging period which is allowed under the standard for ozone. Ozone is not emitted directly, but is formed as a result of chemical interactions of emitted HC and NO_x in the atmosphere. Since the net emissions change associated with the Proposed Action would result in a considerable reduction in HC emissions, with only a small increase in NO_x, the potential for ozone formation in the area of NAS New Orleans may be reduced. The net changes in annual emissions of the other pollutants would not significantly impact air quality.

Because there would be an overall net reduction in pounds of annual emission of pollutants, and emissions from construction programs would be short-term, no adverse cumulative impacts are expected.

4.1.2 Military Training Routes

VR-179 and VR-1196 are located in Prevention of Significant Deterioration Class II areas for which maximum allowable increases in pollutants have been established. The estimated ground level concentrations of criteria pollutants and ozone precursors of the Proposed Action along VR-179 and VR-1196 are shown in Table 4-2. The emissions calculations were performed using worst-case conditions as describe in Section 3.2.1.2. The Proposed Action would increase emissions concentrations for all of the criteria pollutants. However, emissions contributions under the Proposed Action are below the Class II allowable increments and applicable National Ambient Air Quality Standards, therefore no significant impacts would occur to air quality from the Proposed Action.

No other planned projects have been identified for use of these routes; therefore, no cumulative impacts would occur to air quality from MTR use.

4.2 AIRSPACE

The DOD has through various departments and in the case of VR-179 and VR-1196 through Headquarters AFRES established specific guidlines and standards for the management of special use airspace. VR-179 and VR-1196 currently have F-16 and other fighter aircraft conducting the same maneuvers as the Proposed F-16, and the proposed use does not change the routes. In addition, the proposed flight operations around NAS New Orleans would not increase significantly from A-10 operations. Therefore, the increase use by F-16 aircraft from the Proposed Action would have no significant impact on VR-179 and VR-1196, the air traffic control system, or the other users of the airspace. No cumulative impacts to airspace have been identified.

4.3 BIOLOGICAL RESOURCES

4.3.1 NAS New Orleans

Construction of the proposed Munitions Storage Facility at NAS New Orleans is the only proposed construction which would affect biological resources. Other construction-related activities would take place on a concrete parking apron or a mowed grass field located next to runway 04/22, and therefore, would not affect biological resources.

Vegetation. The proposed Munitions Storage Facility would be constructed between existing Building 90 and a second facility currently under construction southeast of that building. Construction would cause a permanent loss of vegetation from a 0.4 acre forested area which represents 0.2 percent of the estimated 250 acres of forested area surrounding the construction project. Because the amount of vegetation

Table 4-2. Proposed MTR Air Emission Concentrations

Pollutant	Averaging Period	MTR Concentrations (micrograms per cubic meter) VR-179	MTR Concentrations (micrograms per cubic meter) VR-1196	Federal Standards (micrograms per cubic meter) National Air Quality Standards	Federal Standards (micrograms per cubic meter) PSD Increments Class II
Carbon Monoxide	1-Hour	5 (1.2)*	3.2 (0.5)	40,000	-
	8-Hour	0.2 (0.01)	0.13 (0.2)	10,000	-
Nitrogen Dioxide	Annual	0.002 (0.001)	0.0011 (0.0006)	100	25
Particulate Matter	24-Hour	0.01 (0.002)	0.0064 (0.0024)	150	37
	Annual	0.001 (0.0009)	0.00008 (0.00002)	50	19
Sulfur Dioxide	3-Hour	0.25 (0.12)	0.13 (0.07)	1,300	512
	24-Hour	0.02 (0.012)	0.008 (0.004)	365	91
	Annual	0.003 (0.002)	0.0001 (0.00005)	80	20

* Parentheses indicate increase from baseline shown in Table 3-3.

loss is small, and no critical habitat exist on NAS New Orleans, no significant impacts to vegetation would occur.

Wildlife Resources. Wildlife species would be affected by a long-term loss or alteration of habitat. Mobile species would be displaced to adjacent areas and mortality rates would probably increase for the less mobile species. The net effect would be a localized decrease in wildlife numbers. The net effect on wildlife populations in the area would not be significant because the habitat lost as a result of the proposed facility construction would be small when compared to the available habitat in the area (0.2 percent of available habitat).

Activities and noise associated with construction would have short-term effects on local wildlife by causing those species intolerant of such disturbances to avoid the vicinity of the project. Additional noise and lighting associated with the operation of the facility would continue indefinitely. Overall effects on wildlife populations adjacent to the facility are anticipated to be short-term and not significant, as most species are expected to habituate to the disturbance and return to their former habitats. In addition, because the proposed munitions storage facility would be enclosed by a fence, no additional human access to the surrounding woodlands would be expected. F-16 operations would not significantly change the off-base noise and visual effects currently associated with flight operations at NAS New Orleans. Therefore, impacts to off-base wildlife species would not be significant. Because the number of aircraft sorties would not increase significantly after the conversion, impacts to birds (i.e., aircraft strikes to birds) are not expected to change.

Threatened and Endangered Species. No federally or state-listed threatened or endangered species are known to occur at NAS New Orleans, and no critical on-site habitats exist for listed species that might potentially occur at the station. Because the Proposed Action would not affect the canals or waterways on the station, except for minor increases in water runoff from the proposed facility, the Proposed Action would not affect the American alligator (threatened by similarity of appearance) or any other species which may use the waterways.

Because most construction would take place in mowed or paved areas, and other planned projects would not decrease the amount of available habitat in the area, no significant cumulative impacts are expected.

4.3.2 Military Training Routes

Any impacts along the MTRs would be caused by the increased appearance of low-flying aircraft; the noise intensity and duration of the aircraft overflight; and by collisions of the aircraft with birds. Other impacts may occur from the sight of additional flares dropped from aircraft on VR-179, especially if it occurs at night.

Vegetation. The use of flares would not affect vegetation because of the precautions used to minimize the potential for flare-induced fires, as addressed in Health and Safety. Therefore, the increase in aircraft overflights would not have an impact on the vegetation.

Wildlife. Although the total number of flights would increase on the MTRs, other similar aircraft already fly these routes. Animal responses to overflight of aircraft depend on the animals' experience with the associated noise and visual effect. The availability of vegetation or landform cover as hiding places also temper an animal's startle response to the aircraft. (Bowles et al., 1991; Manci et al., 1988). Animal responses also vary with the nature of their ongoing activities, location, and their physical condition. They are less likely to respond if they were involved in important activities, such as feeding, guarding a calf, or avoiding clouds of blood-sucking insects (Bowles et al., 1991).

The sound impacts from low overflights have been known to affect animals' hearing or interfere with animal communication. Rodents and reptiles can lose some of their hearing when exposed to loud noises. This decreased level of hearing may jeopardize their ability to escape predators. Owls who hunt at night rely on their hearing to locate their prey. A decrease in hearing of owls may decrease their nutrient availability and ultimately, their breeding success (Manci et al., 1988). However, as discussed in Section 2.1.3, aircraft flight is planned for 500 feet or more above ground level and the noise levels for the F-16 aircraft would be 9 dB less than for some aircraft already flying the corridors such as the A-4.

Overflight at this altitude can cause hooved animals to become alert but usually does not cause them to run (Bowels et al., 1991). In addition, noise levels from aircraft activity at 500 feet above ground level and higher should not result in hearing loss to wildlife species; therefore, no significant impacts would occur from increase noise levels and frequency of flight.

The military currently incorporates avoidance mitigation measures to prevent bird/aircraft strikes. Flight operations are not conducted at the altitudes, times of day/year, or in airspace where anticipated bird migration is thought to be concentrated. Although an increase in the number of flights would be associated with an increase in bird/aircraft collisions, the measures adopted by the military would be expected to keep these collisions to a minimum.

Flare use would be twenty per year for the proposed F-16 aircraft on VR-179. The duration of effect, limited area of effect, and low frequency of use is not expected to cause any significant impact to the wildlife in the area.

Threatened and Endangered Species. Of the species identified by the U.S. Fish and Wildlife Service (1992), only four species have any potential for impact: the red-cockaded woodpecker, the bald eagle, the Louisiana black bear, and the Mississippi sandhill crane.

The red-cockaded woodpecker does not migrate, so it would not be expected to fly high enough to get into the flight path of a passing aircraft. Many stable breeding populations have been reported in areas outside of the corridors so the corridors do not contain designated critical habitat for this species. Although this species is found throughout the MTRs, the impact of the project would only be a small increase in disturbance from the baseline activities. Due to this species' success in the past, the effect of the project is considered to be not significant.

The bald eagle could be minimally affected due to the increase in bird/aircraft collision potential. However, due to its limited, migratory status in the area and to the precautions adopted by the military during the sensitive migration times, the effects to the bald eagle are not expected to be significant.

Both MTRs pass over the Pascagoula River State Wildlife Management Area where there is a small breeding population of the Louisiana black bear. Overflights in the area are kept to a minimum elevation of 1,000-5,000 feet to avoid bird/aircraft collisions during certain times of the year and day because of the high bird use of the Wildlife Management Area. This policy also minimizes impacts to the black bear. An increase in the number of overflights in this area is not expected to create a change in the black bear's ability to survive and reproduce; therefore, the effect is not expected to be significant.

VR-179 crosses over the Mississippi Sandhill Crane National Wildlife Refuge. Due to the concentration of seabirds and soaring birds of prey along the gulf coast, the military has a suggested minimum altitude policy of 1,000-5,000 feet above ground level during certain times of the day and year when bird flight activity is high. This policy protects the sandhill cranes as well as the aircraft. Otherwise, the increase in air traffic should not create any additional disturbance to the population in the refuge. The impact is not expected to be significant.

Although the project would increase aircraft overflight in the MTRs, the cumulative effects of the additional flights would not create a significant increase in adverse biological impacts because flight would occur above 500 feet above ground level.

4.4 CULTURAL RESOURCES

Because consultation with the Louisiana State Office of Historic Preservation and concomitant archival research revealed that no known cultural resources exist within the area of potential effect for aircraft conversion activities, there is no significant impact expected to this resource from the Proposed Action. In light of the physiographic nature of the area and the significant cultural resources that are known to exist in the southeastern Louisiana region, some potential for cultural resources does exist. In the event that any such resources are unexpectedly encountered during the course of the undertaking, construction would immediately cease and the station's Historic Preservation Coordinator would be consulted before construction would be allowed to proceed. Subsequent actions would comply with 36 CFR 800.11 and the Native American Graves Protection and Repatriation Act, and would conform to guidelines established in the station's Historic and Archaeological Resources Protection Plan (U.S. Army Engineering District, Fort Worth Planning Division, 1990).

Because no known cultural resources exist at NAS New Orleans, cumulative impacts are not expected.

4.5 HEALTH AND SAFETY

4.5.1 NAS New Orleans

Ground Safety. Health and safety impacts related to construction activities are not anticipated to present a higher risk potential than would be expected for similar projects, except for the potential for workers to come in contact with asbestos in buildings to be modified. However, to avoid impacts to workers, these buildings would be surveyed for asbestos prior to final design review. If asbestos is found in the areas to be modified and it cannot be avoided, it would be removed and disposed by a certified asbestos contractor prior to the start of construction.

As part of the operations procedures, H-70 would be installed onto the F-16 aircraft in 6.5 gallon tanks as an emergency power source. Hydrazine is toxic and, if the vapor is inhaled, irritation of the respiratory tract can occur. Prolonged exposure can cause damage to both the liver and kidneys. Contact of H-70 with body tissue can produce local damage resembling alkali burn. Ingestion or absorption of hydrazine through the skin can produce nausea, dizziness, headache, and convulsions (General Dynamics, 1989).

During normal operations, the equipment and procedures specified for changing the H-70 tanks on aircraft would reduce the risk of inhalation by pilots and technicians. Measures to reduce the consequences of accidental spills would be oriented toward the technicians, the air, and water resources. For example, impacts to technicians, such as eye irritation and toxic effects resulting from skin absorption and inhalation, would be negated by use of rubber gloves, protective clothing, face shields, and respiratory protection. Safety showers and eyewash fountains would also be available for first aid. A ventilation system in the hydrazine facility would maintain hydrazine levels in the workplace below the threshold limit value for an eight-hour working exposure of 0.1 parts per million. In addition, the concentration of H-70 in the air would be monitored in the hydrazine storage area. The hydrazine facility and hydrazine purge pad would be designed such that any spill would be contained in that facility. Spills within the hydrazine facility would flow to a collection tank capable of containing and retaining properly diluted H-70 and neutralizer solution.

Currently, no emergency response plan exists for hydrazine at NAS New Orleans. Therefore, the use of hydrazine at NAS New Orleans would be incorporated into the NAS New Orleans Oil and Hazardous Substance Spill Contingency Plan (Environmental and Safety Design, Inc., 1991), and the Hazardous Waste Management Plan (Department of the Navy, 1989). These plans would be updated to include accidental spills and dripping that may occur during normal use of hydrazine and include procedures for neutralizing spilled hydrazine. In addition, updates would include procedures to contain, clean up, and store the H-70 without trying to neutralize it so it can be shipped to a facility that can neutralize it in a safe and effective manner.

The control of potential impacts to health and safety from both aircraft operations (e.g., ordnance storage, maintenance, and AICUZ) and spills involving hydrazine would be based on procedures and equipment specified by Air Force Occupational Safety and Health, Navy, and Occupational Safety and Health Administration regulations. The transportation of hydrazine to NAS New Orleans would be in stainless steel, 55-gallon drums and would be in accordance with BOE-6000-I and Department of Transportation regulations. The effective use of the above procedures and equipment would be attributable to the training of personnel in specified

assignments for normal operations and accident situations, and would result in no significant impact to station personnel health and safety, air quality, water resources, or biological resources. In addition, an assessment of H-70 use on the F-16 is presented in the Environmental Assessment of an Aircraft Conversion, 107th Fighter Interceptor Group, Niagara Falls Air Force Reserve Facility, Niagara Falls International Airport, New York (Department of the Air Force, 1989). This EA also concluded that no significant impact would occur from the use of H-70 with the F-16 following the procedures listed above.

Aircraft Safety. The Class A/B mishap rates for the A-10 and F-16, based on observed data from 1985 to 1989, are 2.7 and 5.4 mishaps per 100,000 flying hours, respectively (Murone, 1991). Based on statistical tests, these two mishaps rates are not significantly different from one another. Also, when these extremely low probabilities for a Class A/B mishap are applied to the relatively few hours of flight time for these aircraft (approximately 5,000 hours for the A-10 and 6,000 hours for the F-16) at NAS New Orleans, the differences in the mishap rates (0.1 per year for the A-10, and 0.3 per year for the F-16) become even less relevant. As a result, further consideration of mishap rates for the two aircraft is not necessary for this analysis.

No potential cumulative health and safety impacts have been identified from current or future actions.

4.5.2 Military Training Routes

Fire Safety. The use of flares by the 926th FG on VR-179 could slightly increase fire risk below the MTR. However, flares have a minimum release altitude of 700 feet above ground level on government owned land (e.g., military restricted areas) and 2,000 feet above ground level on non-government owned land to ensure complete burning before coming in contact with the ground. In addition, during dry periods the altitude of release would be increased to 1,000 feet above ground level on government owned land (no change on non-government land) as an extra safety precaution. Because of the low use of the flares on VR-179 (approximately 20 a year) and the above safety measures, no significant impacts would occur from the Proposed Action.

Aircraft Mishaps. Despite the increase in flight operations and flying hours, use of the MTRs would not increase the potential for aircraft mid-air collisions. As discussed above the potential for a Class A/B mishap would be low for F-16 aircraft. In addition, there have been no reported mid-air collisions on these routes; therefore, the increase potential for aircraft collisions/mishaps would not be significant.

Bird-aircraft strike hazard would increase under the Proposed Action. As discussed in Section 3.2.5, there is one bird-aircraft strike for every 53,700 miles flown on VR-179 and 426,000 miles on VR-1196. Under the Proposed Action this would equate to approximately 2.5 bird-aircraft strikes per year on VR-179 and 0.3 on VR-1196. However, given the sparse population under the routes and the safety measures taken to avoid sensitive areas during migratory bird season (e.g. increasing altitude of use) these bird-aircraft strikes would not result in a significant increase to public safety.

No cumulative health and safety impacts have been identified from current or future actions on the MTRs.

4.6 HAZARDOUS MATERIALS/WASTE MANAGEMENT

The hazardous wastes generated at NAS New Orleans are managed in accordance with applicable federal and state regulations (Department of the Navy, 1989). Generally, the types and volumes of hazardous waste expected after the conversion would be similar to those associated with current operations using the A-10.

An additional hazardous material, H-70 (see Section 4.5 for more details), could be used as a result of the conversion. H-70 would be used only during infrequent engine, hydraulic, or electrical emergencies (i.e., failures), and therefore, the consumption of H-70 would be relatively limited. Waste generated by use of H-70 and from accidental spills or leaks would be containerized and disposed as a hazardous waste at an authorized treatment or disposal facility. Spills of a pound or more of H-70 would be reported to appropriate regulatory agencies according to Superfund Amendments and Reauthorization Act Title III.

Once H-70 is placed into hazardous waste containers, it would be transferred to NAS New Orleans' hazardous waste storage area, where it would be picked up within 90 days by the Defense Reutilization and Marketing Office. Hazardous waste generated by the Proposed Action would be disposed in accordance with the NAS New Orleans' Hazardous Waste Management Plan (Department of the Navy, 1989). This plan would be updated to include procedures to contain, clean up, store, and transport the H-70 waste.

Hazardous waste generated during construction, including any potential hydraulic leakage and oil spills from construction equipment, would be the responsibility of the construction contractor, and would be contained, collected, and removed from the station. If a hazardous waste spill should occur, the contractor would notify the station's environmental coordinator.

Currently there are seven IRP sites listed in the NAS New Orleans Site Inspection Study (ECOTECH, Inc., 1989). None of these sites are located near the proposed construction or operations for the aircraft conversion. Therefore, no impacts would occur to remediation work on these sites or to the construction and operations personnel, who would not normally come in contact with these waste sites. No significant impacts to hazardous waste management would occur because (1) the amounts of hazardous waste would not increase during operations, except for the potential for small amounts of H-70, which would be incorporated into appropriate base plans, and (2) hazardous waste generated during construction would be disposed by the contractor. In addition, because there is only a potential for minor increases in hazardous waste, and all construction-related material would be cleaned up by each contractor from the other proposed construction programs at the station, no significant cumulative impacts are expected.

4.7 INFRASTRUCTURE

Conversion to the F-16 aircraft would involve a 18 percent decrease in personnel required to carry out the current mission of the 706th FS. Thus, the demand for additional infrastructure for personnel (e.g., potable water, natural gas, electrical power, sewage treatment, solid waste, and transportation) would decrease. However, there would be a minor increase in demand for natural gas and electricity for the new facilities. This projected increase in demand is well within the capacity for electricity and natural gas systems on the station.

Some minor increases in infrastructure demand would occur during construction-related activities. During the year and a half construction program, up to 200 construction workers may be required. These additional temporary personnel represent a 7 percent increase in the station's population (approximately 3,074), which can be handled by existing infrastructure. The construction of the proposed facilities would generate a measurable volume of solid waste, such as scrap lumber, metal, and masonry. The collection and disposal of such waste would be specified in the construction contract.

Cumulative impacts could occur to infrastructure from two other planned construction programs on NAS New Orleans during the same time period as the proposed aircraft conversion construction. However, the base infrastructure is adequate to handle the temporary increase. In addition, the increase in traffic from construction-related activities (approximately a 1 percent increase in traffic near Belle Chasse) would not affect the current level of service of A and B on Highway 23 (see Section 3.2.7). Construction-related congestion at station entrance gates and on NAS New Orleans would be discussed in a preconstruction meeting with the Resident Officer in Charge of Construction. The meeting would address entrance and

exit times and alternate travel routes open for construction personnel and their equipment to avoid impacts to station operations.

Overall, the increased demand upon the station's infrastructure would be temporary and the system is currently adequate to handle the Proposed Action.

4.8 LAND USE

4.8.1 NAS New Orleans

Based on the land use compatibility categories of Table 4-3, the Federal Interagency Urban Noise Committee has delineated several basic types of land use areas that are defined operationally by average noise levels and accident potential zones, and for which it is suggested that either restrictions or cautions be exercised with regard to usage due to noise levels and/or accident potential. The delineation of the compatible land use zones is designed to assist local planning boards in minimizing noise impacts to the local population.

The most restrictive land use category for residential areas is defined by average noise levels above DNL 75 dB. Land in such an area requires the strictest zoning controls and the possibility of additional aviation easements. The second most restrictive land use zone for residential areas is defined as areas with noise levels between DNL 65 and 75. It is recommended that careful zoning be implemented for land use in these areas to minimize noise impacts to new residential developments. The controls recommended include the use of specialized building materials when constructing new residences to reduce the acoustical impacts. The third restriction zone is defined as land areas that do not currently fall within incompatible land uses but are close enough to require the exercise of caution in land use planning to ensure development does not encroach upon incompatible zones.

The proposed conversion would increase noise levels within the area northeast of NAS New Orleans. Section 4.9 shows the proposed noise contours and acreage increase when compared to existing conditions. The off-base acreage exposed to noise levels greater than DNL 65 would increase approximately 4 percent in mostly undeveloped and industrial areas around Belle Chasse and therefore, would not change land use because of noise incompatibility. In addition, land exposed to noise level increases above DNL 75 would occur in the immediate area off-base on undeveloped land.

Noise levels on NAS New Orleans would increase in the DNL 75 and above range. The on-station acreage exposed to noise levels greater than DNL 75 would increase by approximately 6 percent. The increase in noise levels would mostly occur to the undeveloped end of Runway 04/22, with minor

Table 4-3. Land Use Compatibility Guidelines[a]

Land Use Category	Land Use Compatibility by Day/Night Average Sound Levels in dB[a]				
	>85	80-85	75-80	70-75	65-70
Residential	I	I	I	30[b]	25[b]
Industrial/manufacturing	I	C[c]	C[d]	C[e]	C
Transportation, communication and utilities	C	C	C	C	C
Commercial and retail trade	I	I	30	35	C
Personal and business services	I	I	30	25	C
Public and quasi-public services	I	I	I	30	25
Outdoor recreation	I	I	I	C[f,g]	C
Resources production, open space	C	C[h]	C[h]	C	C

Notes:

(a) Alphanumeric entries have the following meanings:
I Incompatible: The land use and related structures are not compatible and should be prohibited;
C Compatible: The land use and related structures are compatible without restriction and should be considered; 35, 30, or 25:
The land use is generally compatible; however, a noise level reduction of 35, 30 or 25 must be incorporated into the design and construction of the structure.

(b) Although local conditions may require residential uses in a compatible use district this use is strongly discouraged in DNL 70-75 and discouraged in DNL 65-70. The absence of viable development alternatives should be determined and it should be shown that a demonstrated community need for residential use would not be met if development were prohibited in these compatible use districts.

(c) A noise reduction level of 35 must be incorporated into the design and construction of portions of these buildings where the public is received, where office areas are located, or where the normal noise level is low.

(d) A noise reduction level of 30 must be incorporated into the design and construction of portions of these buildings where the public is received, where office areas are located, or where the normal noise level is low.

(e) A noise reduction level of 25 must be incorporated into the design and construction of portions of these buildings where the public is received, where office areas are located, or where the normal noise level is low.

(f) Facilities must be low intensity.

(g) A noise reduction level of 25 must be incorporated into buildings for this use.

(h) Residential structures not permitted.

increases occurring in the immediate vicinity of the flight line adjacent to Runway 04/22. Noise levels in the remainder of the station's land use categories (e.g., administration, housing, medical, etc.) would not increase significantly and therefore, no significant impacts would occur to land use categories as a result of noise on station.

The four new facilities and sound suppressor pad to be constructed for the conversion would be located in areas of compatible land uses within NAS New Orleans; therefore, no significant impacts to the station's current land use plan would occur.

The aircraft conversion was reviewed in conjunction with current and planned actions and information regarding anticipated future projects which may affect land use; no significant cumulative impacts were identified.

4.8.2 Military Training Routes

To assess the land use impacts of the Proposed Action, the noise analysis impacts were reviewed to identify the noise levels that the sensitive land uses would be exposed to. Sensitive land uses (i.e., wildlife management areas or parks) would not be exposed to noise higher than 48 dB under VR-1196 and 52 dB for VR-179. These noise levels are well below the DNL noise/land use compatibility guidelines developed by the Federal Interagency Urban Noise Committee as discussed above. Therefore, no significant impacts to the sensitive land uses described in Table 3-5 and Table 3-6 would occur because of the increased noise levels from the proposed operations for VR-1196 or VR-179. No impacts to land ownership or the existing function of sensitive land uses would occur.

Because no other programs have been identified for these MTRs, no cumulative impacts would occur.

4.9 NOISE

4.9.1 NAS New Orleans

Frequency of Flight Operations. The data on daily operations that appear in Table 4-4 are representative of the Proposed Action's operating conditions. The overall number of operations differ from the baseline conditions in two ways.

The first concerns flight sorties and touch and go operations. It is estimated that the F-16s would fly approximately 3,000 sorties (distributed on 20 flight tracks) and an additional 400 touch and go landings (distributed on six patterned flight tracks) per year. This differs from the 2,500 sorties (using 10 flight tracks) and 500 low level approaches (using four pattern flight tracks) currently conducted with the A-10 aircraft. It was determined that the F-16's flight track usage would be identical that used at the air base from which the aircraft are being transferred; an increase in flight tracks would thus result.

The second difference is the location of maintenance run-up operations. The A-10 run-up operations are currently located on the trim pad located to the northeast of the midpoint of Runway 14/32. F-16 maintenance operations would be conducted in a hush house facility located to the south of the midpoint of Runway 04/22. The hush house facility would significantly decrease the noise contribution of the F-16 run-up operations.

Table 4-4. Modelled Daily Operations by Flight Track for F-16 Transfer Condition
Page 1 of 2

R/W	No.	F-18		F-15		F-16		P-3		T-37		T-38	
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
04	D1	4.53	–	–	–	–	–	–	–	–	–	–	–
	D2	–	–	5.24	–	–	–	–	–	–	–	–	–
	D3	–	–	1.31	–	–	–	–	–	–	–	–	–
	D4	–	–	–	–	–	–	–	–	–	–	–	–
	D5	–	–	–	–	–	–	–	–	–	–	–	–
	D6	–	–	–	–	–	–	–	–	–	–	–	–
	D7	–	–	–	–	–	–	1.75	–	–	–	–	–
	D8	–	–	–	–	–	–	1.75	–	–	–	–	–
	D9	–	–	–	–	–	–	–	–	5.02	–	5.02	–
	A1	–	–	0.13	–	–	–	–	–	–	–	–	–
	A2	–	–	0.52	–	–	–	–	–	5.02	–	5.02	–
	A3	4.53	–	5.90	–	–	–	–	–	–	–	–	–
	P1	13.48	–	18.78	–	–	–	8.38	–	–	–	–	–
	P2	1.36	–	0.88	–	–	–	2.10	–	15.04	–	15.04	–
	17A1	–	–	–	–	2.46	–	–	–	–	–	–	–
	17A2	–	–	–	–	1.44	–	–	–	–	–	–	–
	17A3	–	–	–	–	0.54	–	–	–	–	–	–	–
	17A4	–	–	–	–	0.24	–	–	–	–	–	–	–
	17A5	–	–	–	–	1.08	–	–	–	–	–	–	–
	17B1	–	–	–	–	1.68	–	–	–	–	–	–	–
	17B2	–	–	–	–	0.72	–	–	–	–	–	–	–
	17B3	–	–	–	–	1.30	–	–	–	–	–	–	–
	17B4	–	–	–	–	0.84	–	–	–	–	–	–	–
	17B5	–	–	–	–	1.18	–	–	–	–	–	–	–
	17C1	–	–	–	–	0.54	–	–	–	–	–	–	–
	17C2	–	–	–	–	0.12	–	–	–	–	–	–	–
	17C3	–	–	–	–	0.10	–	–	–	–	–	–	–
22	D1	1.13	–	–	–	–	–	–	–	–	–	–	–
	D2	–	–	0.33	–	–	–	–	–	–	–	–	–
	D3	–	–	1.31	–	–	–	–	–	–	–	–	–
	D4	–	–	–	–	–	–	–	–	–	–	–	–
	D5	–	–	–	–	–	–	–	–	–	–	–	–
	D6	–	–	–	–	–	–	–	–	–	–	–	–
	D7	–	–	–	–	–	–	0.47	–	–	–	–	–

Table 4-4. Modelled Daily Operations by Flight Track for F-16 Transfer Condition
Page 2 of 2

		F-18		F-15		F-16		P-3		T-37		T-38	
R/W	No.	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
22	D8	–	–	–	–	–	–	0.46	–	–	–	–	–
	D9	–	–	–	–	–	–	–	–	1.01	–	1.01	–
	A1	–	–	0.03	–	–	–	0.09	–	–	–	–	–
	A2	–	–	0.13	–	–	–	0.84	–	1.01	–	1.01	–
	A3	1.13	–	1.48	–	–	–	–	–	–	–	–	–
	P1	3.72	–	4.70	–	–	–	2.23	–	–	–	–	–
	P2	0.34	–	0.22	–	–	–	0.56	–	3.01	–	3.01	–
	35A1	–	–	–	–	1.06	–	–	–	–	–	–	–
	35A2	–	–	–	–	0.62	–	–	–	–	–	–	–
	35A3	–	–	–	–	0.22	–	–	–	–	–	–	–
	35A4	–	–	–	–	0.10	–	–	–	–	–	–	–
	35A5	–	–	–	–	0.46	–	–	–	–	–	–	–
	35B1	–	–	–	–	0.62	–	–	–	–	–	–	–
	35B2	–	–	–	–	0.30	–	–	–	–	–	–	–
	35B3	–	–	–	–	0.62	–	–	–	–	–	–	–
	35B4	–	–	–	–	0.40	–	–	–	–	–	–	–
	35B5	–	–	–	–	0.50	–	–	–	–	–	–	–
	35C1	–	–	–	–	0.22	–	–	–	–	–	–	–
	35C2	–	–	–	–	0.02	–	–	–	–	–	–	–
	35C3	–	–	–	–	0.08	–	–	–	–	–	–	–
14	D1	–	–	–	–	–	–	0.19	–	1.07	–	1.07	–
	A1	–	–	–	–	–	–	0.19	–	1.07	–	1.07	–
	P1	–	–	–	–	–	–	–	–	–	–	–	–
32	D1	–	–	–	–	–	–	0.14	–	0.40	–	0.40	–
	A1	–	–	–	–	–	–	0.14	–	0.40	–	0.40	–
	P1	–	–	–	–	–	–	0.34	–	–	–	–	–
	P2	–	–	–	–	–	–	0.08	–	1.21	–	1.21	–
	Daily*	49.12	25.79	66.54	0.00	18.54	0.00	36.90	0.00	53.48	0.00	53.48	0.00
	Annual*	17,929		23,922		6,767		13,469	–	19,520		19,520	

* Note: Pattern operations counted as two operations in totals.
Numbers in table are rounded.
A = Arrival Track
D = Departure Track
P = Pattern Track

Day-Night Average Sound Level. The NOISEMAP methodology was used to compute the DNL contours. Figure 4-1 presents the noise contours for the Proposed Action. A comparison of the baseline contours with the Proposed Action contours (Figure 4-2) shows small differences which are further defined in terms of acreage affected as shown in Table 4-5. The most noticeable change is in the DNL 65 and 70 contours to the northeast of Runway 04 due to a concentration of F-16 flight tracks. A second area is that surrounding the location of the run-up area where A-10 aircraft conducted engine maintenance. Since the F-16 run-ups would be conducted in the hush house, there is a slight reduction in the DNL 70 and 75 contours around the run-up. Otherwise, the contours are virtually identical and therefore no significant impacts to the noise environment are expected from the F-16 conversion.

Table 4-5. Acres Within DNL Contours Comparing Baseline and Proposed Action

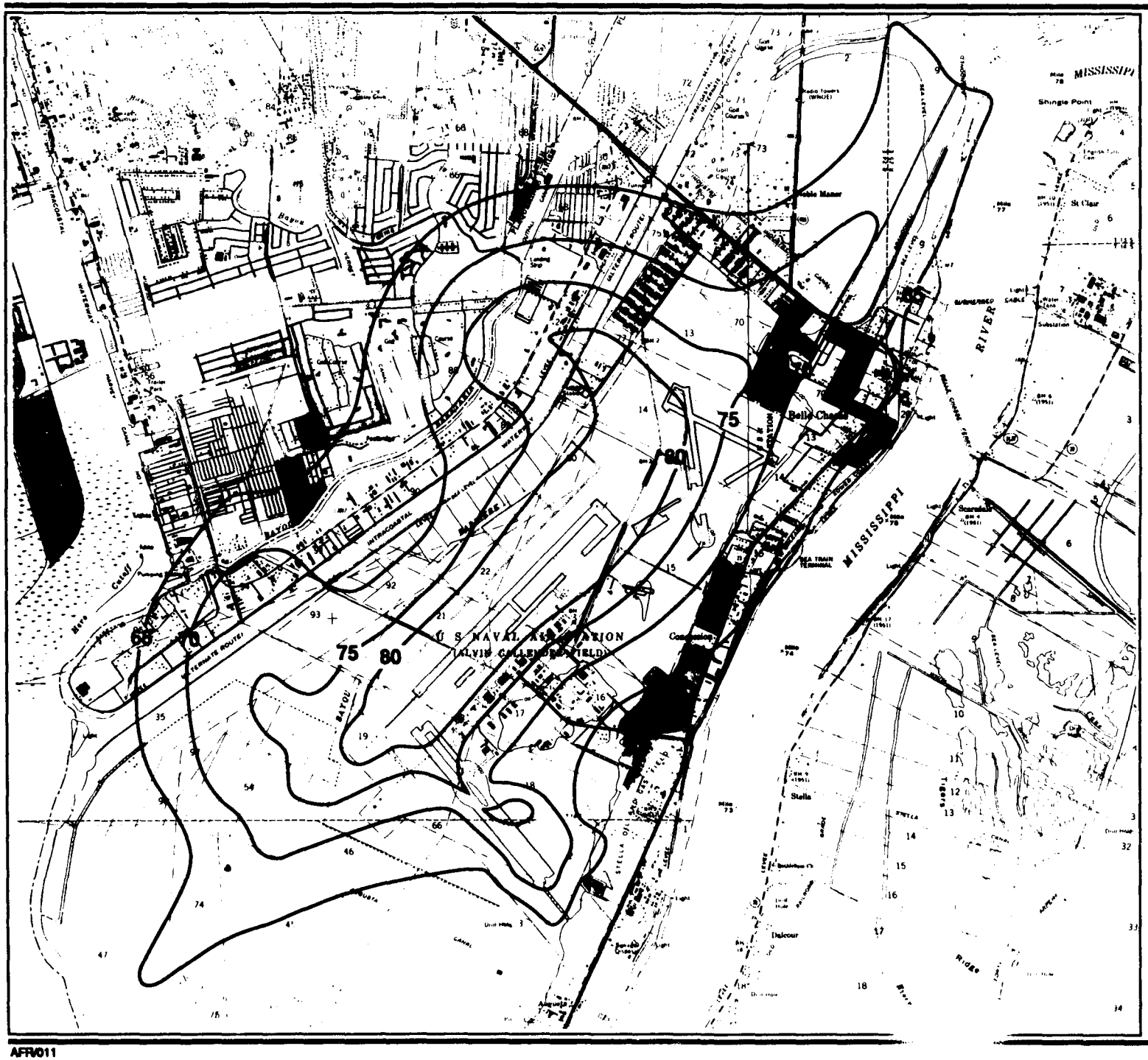
DNL Level	Baseline	Proposed Action	Difference
65-70	3,812	3,978	166
70-75	2,473	2,580	107
75-80	1,321	1,394	73
>80	1,122	1,188	66

Single-Event Analysis. As was done for the A-10 flights, the noisiest SEL of the proposed F-16 were computed for 11 community noise-sensitive locations. The results, listed in Table 4-6, show that the noisiest single event for the F-16 at a particular sensitive receptor is consistently greater than that for the A-10 aircraft at the same location. In addition, the maximum SEL resulting from other aircraft operations is generally higher than either the A-10 or F-16. The maximum SEL produced by aircraft currently operating at the base are higher than those resulting from F-16 operations at all locations except for three receptors in Belle Chasse.

Because no other conversions are planned for NAS New Orleans and current flight amounts are not expected to increase for other units operating on the station, no significant cumulative impacts are expected to the noise environment.

4.9.2 Military Training Routes

The proposed operations for VR-1196 and VR-179 are listed in Table 4-7, as are the changes from current operations. The levels at various distances are tabulated in Table 4-8 as well as the level increases over current operations.

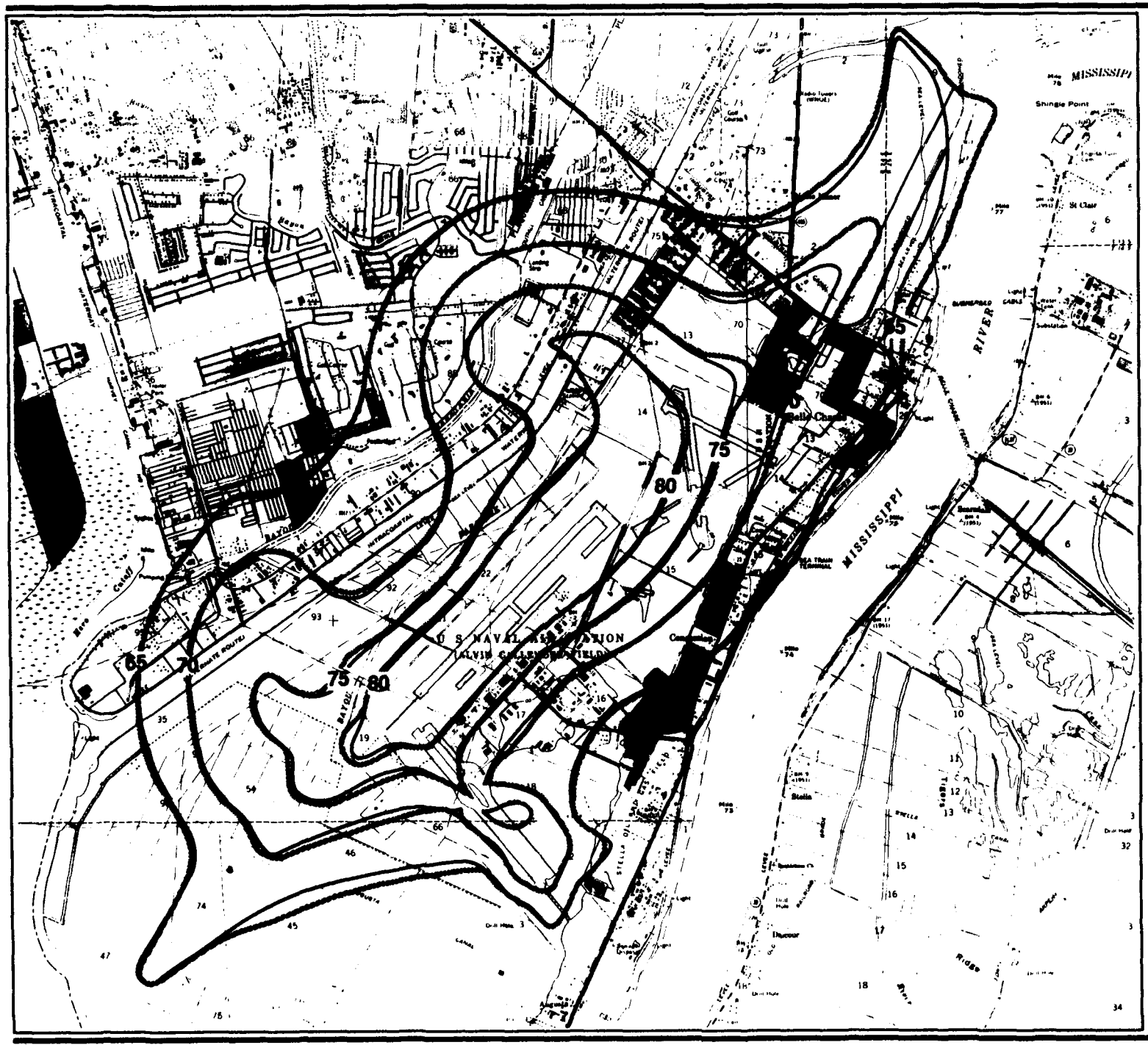


Proposed Action Noise Contours

Naval Air Station
New Orleans,
Louisiana

Figure 4-1

AFR/011



Comparison of Baseline and Proposed Action Noise Contours

Naval Air Station
New Orleans,
Louisiana

EXPLANATION

Baseline

Proposed

0 1000 3000 4500 Feet

Figure 4-2

AFR/012-1

Table 4-6. Estimated Sound Exposure Levels for Locations Near NAS New Orleans for the Proposed Action

Location	Estimated SEL (db) Existing Noisiest	A-10	F-16
Augusta	101	76	94
Promised Land	103	79	93
Trailer Park between Harvey Canal and Murphy Canal	103	74	82
School near Highway 23 and Sea Train Terminal	102	86	102
Belle Chasse Church	105	88	101
Belle Chasse Residential	105	99	110
Belle Chasse State School	95	89	99
Cox School	92	70	84
Visitation School	88	77	90
Hope Haven Institute	87	71	86
McDonoghville No. 27 School	91	81	90

Table 4-7. Proposed Average Monthly Aircraft Sorties for VR-1196 and VR-179

Aircraft Type	VR-1196 Proposed Operations	VR-1196 Change From Baseline	VR-179 Proposed Operations	VR-179 Change From Baseline
A-10	2	-2	5	-5
A-4	4	0	2	0
T-38	2	0	2	0
A-6	2	0	2	0
AV-8	4	0	4	0
F-15E	4	0	14	0
F-16	46	+42	81	+67
F-18	2	0	4	0

Table 4-8. L_{dnmv} in dB at Distances Perpendicular to MTR Centerline for VR-1196 and VR-179

	VR-1196		VR-179	
Distance from Centerline (feet)	Proposed Action L_{dnmv} (dB)	Change from Baseline (dB)	Proposed Action L_{dnmv} (dB)	Change from Baseline (dB)
On Centerline	48	+2	52	+2
5,000	48	+2	52	+2
10,000	47	+2	51	+2
15,000	46	+3	49	+1
20,000	43	+2	47	+2
25,000	41	+3	44	+1
30,000	37	+2	41	+2
35,000	33	+2	37	+2

L_{dnmv} increases marginally by 2-3 dB and 1-2 dB for VR-1196 and VR-179, respectively. The highest L_{dnmv} of 48 dB for VR-1196 corresponds to 1.6 percent highly annoyed, an increase of 0.3 percent over current operations.

For VR-179 the highest L_{dnmv} is 52 dB, corresponding to 2.7 percent highly annoyed, an increase of 0.6 percent.

Land use compatibility guidelines based on L_{dnmv} have not been developed, however, with the recommendation to use L_{dnmv} as an equivalent to DNL (Plotkin, et al., 1987), the DNL guidelines shown in Section 4.8 could be used as approximate guidelines. L_{dnmv} would not exceed 65 dB in either of the MTRs for the Proposed Action. The DNL guidelines designate DNL below 65 dB as being compatible with all land uses. Based on the land use compatibility guidelines and ROUTEMAP's computed levels, no significant impacts to the noise environment are expected from the proposed operations along the MTRs.

Because no other use of the MTRs is planned and current flight operations are not expected to increase for other units operating on the routes, no significant cumulative impacts to the noise environment are expected.

4.10 SOCIOECONOMICS

No significant adverse social or economic effects would result from the proposed aircraft conversion. The conversion would reduce part-time (weekends and two weeks a year) reservists by 247 personnel (24 percent) and increase full-time reservists by 8 personnel (2 percent). The reduction in part-time reservists personnel is even less when converted to full-time equivalents of 30 to 35. Because the decrease in personnel would be small in comparison to the large population of the New Orleans area, any impact to the local economy would be negligible and short-term. Construction activities associated with the proposed aircraft conversion would provide some short-term economic benefits to the area in the form of temporary employment and purchase of building materials.

During the proposed construction for the conversion, two other programs are planned by the Navy. The additional purchasing and payroll from these programs, combined with the proposed conversion's construction, would provide a cumulative economic benefit to the local community. Overall, no significant impacts are expected to socioeconomics from the Proposed Action.

4.11 WATER RESOURCES

4.11.1 NAS New Orleans

The activities associated with construction and renovation of facilities for the proposed aircraft conversion could temporarily increase surface soil erosion into the drainage canals on NAS New Orleans. Some temporary minor degradation, primarily from the introduction of sediments, could occur to surface waters at the station. Runoff from construction areas would also potentially contaminate surface water with motor oil, hydraulic fluid, and other products associated with construction machinery. To avoid potential impacts to water resources during construction, erosion controls such as silt fences, hay bales, or other such means would be implemented. Hydraulic leaks or oil spills, which may occur during construction would be cleaned up as hazardous waste (see Section 4.6). Other potential runoff would be short-term and minor, pending the completion of construction activities and the stabilization of disturbed areas.

Possible contamination to water resources during aircraft operations could come from hush house washdowns, aqueous fire fighting foam suppression system, and hazardous spills. However, wastewater from the hush house washdowns would be diverted into an oil/water separator, where potential contaminants (primarily hydrocarbons), would be removed and containerized as hazardous waste and disposed at an authorized treatment or disposal facility. The remaining water from the separator would be disposed through the sanitary sewer system. The aqueous fire fighting foam fire suppression

system would be installed in the aircraft hanger. Although not considered a hazardous material, release into the water canals could potentially kill aquatic life by removing oxygen from the water supply. However, if used, the material would be contained, and disposed in accordance with NAS New Orleans' Oil and Hazardous Substance Spill Contingency Plan (Department of the Navy, 1989), thus preventing the material from entering the local water canals. Any hazardous materials spilled from aircraft operations would be contained prior to contact with the water canal system (see Section 4.6 for procedures).

Because of the standard erosion control measures, hazardous waste spills and materials from construction, operations, and hush house washdowns would be cleaned up, containerized, and disposed in accordance with the station's Hazardous Waste Management Plan (Department of the Navy, 1989) and the Oil and Hazardous Substance Spill Contingency Plan (Environmental and Safety Design, Inc., 1991), impacts to water resources would not be significant.

Potential cumulative impacts could occur to water resources from two other construction programs planned at NAS New Orleans. However, it is standard Navy practice to implement soil erosion control measures to prevent run-off into the water canals. In addition, the other construction programs would not take place near the conversion construction. Therefore, no significant cumulative impacts to water resources would be expected.

4.11.2 Military Training Routes

The primary effect of MTRs on water resources is the potential for fires associated with the use of flares. A fire would remove vegetation, thereby increasing potential for soil erosion and reduction in water quality. Although flares are normally completely burned up before contacting the ground, the potential exists for a malfunctioning flare to start a fire underneath VR-179. However, as discussed in Section 4.5.2 the potential for fires from flare use is remote; therefore, no significant impacts to water resources would occur.

Because no other use of VR-179 is planned and current flight operations are not expected to increase for other units operating on the routes, no significant cumulative impacts to water resources are expected.

4.12 ENVIRONMENTAL CONSEQUENCES OF THE NO-ACTION ALTERNATIVE

If the proposed conversion is not implemented, the AFRES mission and current operations at NAS New Orleans and along the MTRs would remain unchanged and no additional environmental consequences would be anticipated.

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5.0 GLOSSARY

Air Installation Compatible Use Zone:	A concept developed by the Air Force to promote land use development near its airfields in a manner that protects adjacent communities from noise and safety hazards associated with aircraft operations, and to preserve the operational integrity of the airfields.
Air Quality Control Region:	An area designated by Section 107 of the Clean Air Act which is based on jurisdictional boundaries, urban-industrial concentrations, and other factors including atmospheric areas, that is necessary to provide adequate implementation of air quality standards.
Air Traffic Control:	A service operated by appropriate authority to promote the safe, orderly, and expeditious flow of air traffic.
Ambient Air Quality Standards:	Standards established on a state or federal level that define the limits for airborne concentrations of designated "criteria" pollutants (e.g., nitrogen dioxide, sulfur dioxide, carbon monoxide, total suspended particulates, ozone, lead, and hydrocarbons) to protect public health and safety with adequate margin of safety (primary standards) and to protect public welfare, including plant and animal life, visibility, and materials (secondary standards).
Attainment Area:	An air quality control region that has been designated by the Environmental Protection Agency and the appropriate state air quality agency as having ambient air quality levels better than the standards set by the National Ambient Air Quality Standards.
Capacity (Utilities):	The maximum load a system is capable of carrying under existing service conditions.
Cultural Resources:	Objects, structures, buildings, sites, districts, or other physical remains used by humans in the past. Such resources may be prehistoric, historic, architectural, or archival in nature.
Decibel:	The unit of measurement of sound level calculated by taking ten times common logarithm of the ratio of the magnitude of the particular sound pressure to the standard reference sound pressure of 20 micropascals and its derivatives.
Endangered Species:	A species that is threatened or in danger of becoming extinct throughout all, or a significant portion of its range.

Environmental Assessment (EA):	A concise descriptive document that provides sufficient evidence that an environmental analysis has been conducted to determine whether to prepare an Environmental Impact Statement or Finding of No Significant Impact.
Environmental Impact Statement (EIS):	A detailed analysis of environmental aspects of a proposed action that is anticipated to have a significant effect on the human and natural environment.
H-70:	A blend of 70 percent hydrazine and 30 percent water used to operate the F-16 emergency power unit.
Hazardous Waste:	The Resource Conservation and Recovery Act defines hazardous waste as any discarded material that may pose a substantial threat or potential danger to human health or the environment when improperly handled. Some of the characteristics of these wastes are toxicity, ignitability, corrosivity, and reactivity.
Hush House:	A small hanger attached to a jet engine test cell which will house an entire aircraft. This facility controls the noise level and permits the run-up testing of jet engines without removal from the aircraft. It is used principally for fighter aircraft.
Hydrazine:	A colorless, fuming, corrosive, hygroscopic (moisture absorbing) liquid used in jet and rocket fuels.
Hydrocarbons:	Any of numerous organic compounds, such as benzene and methane, that contain only carbon and hydrogen.
Impact:	An assessment of the meaning of changes in all attributes being studied for a given resource; an aggregation of all the adverse effects, usually measured by a qualitative and nominally subjective techniques.
Infrastructure:	The utility and transportation networks needed for the functioning of an installation.
L_{dn} noise level:	The 24-hour average-energy sound level expressed in decibels, with a 10-decibel penalty added to sound levels between 10:00 p.m. and 7:00 a.m.
L_{dnmr}	L_{dn} with an added onset rate adjustment. Onset rate is defined as sound level increase over time, in units of dB per second. The onset rate adjustment is greater for noise events which come on very suddenly and loudly.

Level of Service:	In transportation analyses, a qualitative measure describing operational conditions within a traffic stream and how they are perceived by motorists and/or passengers.
Military Operations Area (MOA):	An airspace assignment of defined vertical and lateral dimensions established outside positive control areas to separate/segregate certain military activities.
Military Training Routes:	Airspace of defined vertical fixes and lateral dimensions established for the conduct of military flight training at air speeds in excess of 250 knots.
Nonattainment Area:	An air quality control region that has been designated by the EPA and appropriate state air quality agency as having ambient air quality levels above the primary standards set by National Ambient Air Quality Standards.
National Pollution Discharge Elimination System:	Regulates discharges into the nation's waters with a federal permit program designed to reduce the amount of pollutants in each discharge.
Prevention of Significant Deterioration:	In the 1977 Amendments to the Clean Air Act, Congress mandated that areas with air cleaner than required by National Ambient Air Quality Standards must be protected from significant deterioration. The Clean Air Act's prevention of significant deterioration program consists of two elements - requirements for best available control technology on major new or modified sources, and compliance with an air quality increment system.
Restricted Area:	Airspace in which the flight of aircraft, while not wholly prohibited, is subject to restrictions. Most restricted areas are designated joint-use, and operations in the area may be authorized by the controlling air traffic control facility when it is not being utilized by the using agency.
Single-family housing:	A single dwelling unit occupied by one household.
Sortie:	An individual flight; it includes a departure, an approach, and possibly one or more closed patterns.
Special Use Airspace:	Airspace of defined dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not part of those activities.
Threatened Species:	Species likely to become endangered in the foreseeable future.

Total Force Policy: A Department of Defense policy which recognizes all components contributing to the deterrence of war and the protection of national security interests.

Touch and Go: An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway.

Visual Route: Routes used by the Department of Defense and associated Reserve and Guard Units for the purpose of conducting low-altitude navigation and tactical training under visual flight rules below 10,000 feet mean sea level and at air speeds in excess of 250 knots.

6.0 CONSULTATION AND COORDINATION

The federal, state, and local agencies and private agencies/organizations contacted during the course of preparing this Environmental Assessment are listed below:

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U.S. Air Force Reserve Headquarters, Robins AFB
U.S. Fish and Wildlife Service, Southeast Region
U.S. Navy, Naval Air Station New Orleans
U.S. Navy, Naval Facilities Engineering Command, Southern Division

STATE AGENCIES

Louisiana Department of Environmental Quality
Louisiana Department of Forestry
Louisiana Department of Transportation
Louisiana Office of Cultural Development, Historic Preservation Division
Mississippi Pollution Control Bureau, Air Quality Branch
State of Louisiana, Department of Wildlife and Fisheries

LOCAL AGENCIES

Plaquemines Parish Planning Department

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Dallas, TX 75202

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APPENDIX A

BIOLOGICAL SPECIES IN THE PROPOSED PROJECT AREA

Table A-1. Common Species of Bottomland Hardwood Trees Known to Occur or Likely to Occur in the Vicinity of the Proposed Project Area

Common Name	Scientific Name
Sweet gum	*Liquidamber styraciflua*
Pecan	*Carya illinoensis*
American elm	*Ulmus americana*
Hackberry	*Celtis laevigata*
Honey locust	*Gleditsia triacanthos*
Nuttall Oak	*Quercus nuttallii*
Overcup oak	*Quercus lyrata*
Cherrybark oak	*Quercus falcata*
Water oak	*Quercus nigra*
Black gum	*Nyssa sylvatica*
Eastern cottonwood	*Populus deltoides*
Black cherry	*Prunus serotina*
Red maple	*Acer rubrum*
Green ash	*Fraxinus pennsylvanica*
Black willow	*Salix nigra*
Chinese tallow tree	*Sapium sebiferum*
Red mulberry	*Morus rubra*

Table A-2. Species of Understory Vegetation (Vines, Shrubs, and Annuals) Commonly Associated with Bottomland Hardwood Forests in the Proposed Project Area

Common Name	Scientific Name
Swamp privet	*Forestiera acuminata*
Elderberry	*Sambucus canadensis*
French mulberry	*Callicarpa americana*
Rattan vine	*Berchemia scandens*
Ladies' eardrops	*Brunnichia cirrhosa*
Greenbrier	*Smilax spp.*
Trumpet creeper	*Campsis radicans*
Cross vine	*Bignonia capreolata*
Virginia creeper	*Parthenocissus quinquefolia*
Poison ivy	*Toxicodendron radicans*
Box elder	*Acer negundo*
Wax myrtle	*Myrica cerifera*
Marsh elder	*Iva frutescens*
Japanese honeysuckle	*Lonicera japonica*
Pepper vine	*Ampelopsis arborea*

Table A-3. Mammalian Fauna which Occur or would be Expected to Occur in the Proposed Project Area

Common Name	Scientific Name
Virginia opossum	*Didelphis virginiana*
Southeastern myotis	*Myotis austroriparius*
Eastern pipistrelle	*Pipistrellus subflavus*
Red bat	*Lasiurus borealis*
Seminole bat	*Lasiurus seminolus*
Rafineque's big-eared bat	*Plecotus rafinesquii*
Northern yellow bat	*Lasiurus intermedius*
Evening bat	*Nycticeius humeralis*
Brazilian free-tailed bat	*Tadarida brasiliensis*
Nine-banded armadillo	*Dasypus novemcinctus*
Swamp rabbit	*Sylvilagus aquaticus*
Fox squirrel	*Sojurus niger*
Southern flying squirrel	*Glaucomys volans*
Marsh rice rat	*Oryzomys palustris*
Fulvous harvest mouse	*Reithrodontomys fulvescens*
White-footed mouse	*Peromyscus leucopus*
Cotton mouse	*Peromyscus gossypinus*
Hispid cotton rat	*Sigmodon hispidus*
Eastern wood rat	*Neotoma floridana*
Muskrat	*Ondatra zibethicus*
Nutria	*Myocastor coypus*
Raccoon	*Procyon lotor*
Mink	*Mystella avison*
Riva otter	*Lutra canadensis*
White-tailed deer	*Odocoileus virginianus*
Bobcat	*Lynx rufus*
Coyote	*Canis latrans*
Beaver	*Castor canadensis*
Grey fox	*Urocyon cinereoargenteus*
Pine vole	*Microtus pinetorum*
Stripped skunk	*Mephitis mephitis*
Spotted skunk	*Spilogale purtorius*

Table A-4. Common Resident and Transient Birds Likely to Occur in the Proposed Project Area

Common Name	Scientific Name
Pied-billed Grebe	*Podilymbus podiceps*
Green-backed heron	*Butorides striatus*
Little blue heron	*Egretta caerulea*
Great egret	*Casmerodius albus*
Snowy Egret	*Egretta thula*
Wood duck	*Aix sponsa*
Mallard	*Anas platyrhynchos*
Red-shouldered hawk	*Buteo lineatus*
Common mourhen	*Gallinula chloropus*
American coot	*Fulica americana*
Yellow-billed cuckoo	*Coccyzus americanus*
Ruby-throated hummingbird	*Archilochus colubris*
Belted kingfisher	*Ceryle alcyon*
Northern flicker	*Colaptes avratus*
Red-bellied woodpecker	*Melanerpes carolinus*
Eastern kingbird	*Tyrannus tyrannus*
Eastern phoebe	*Sayornis phoebe*
Blue jay	*Cyanocitta cristata*
Carolina wren	*Thryothorus ludovicianus*
Mockingbird	*Mimus polyglottos*
Brown thrasher	*Toxostoma rufum*
American robin	*Turdus migratorius*
Hermit thrush	*Catharus guttatus*
Cedar waxwing	*Bombycilla cedrorum*
European starling	*Sturnus vulgaris*
White-eyed vireo	*Vireo griseus*
Orange-crowned warbler	*Vermivora celata*
Common yellowthroat	*Geothlypis trichas*
Yellow-breasted chat	*Icteria virens*
Red-winged blackbird	*Agelaius phoeniceus*
Orchard oriole	*Icterus spurius*
Boat-tailed grackle	*Quiscalus major*
Common grackle	*Quiscalus quiscula*
Brown-headed cowbird	*Molothrus ater*
Scarlet tanager	*Piranga olivacea*
Summer tanager	*Piranga rubra*
Cardinal	*Cardinalis cardinalis*

Table A-4. Common Resident and Transient Birds Likely to Occur in the Proposed Project Area

Common Name	Scientific Name
Indigo bunting	*Passerina cyanea*
American goldfinch	*Cardvelis tristis*
Rufous-sided towhee	*Pipilo erythrophthalmus*
White-throated sparrow	*Zonotrichia albicollis*
Swamp sparrow	*Melospiza georgiana*
Song sparrow	*Melospiza melodia*
Purple martin	*Progne subis*
Common nighthawk	*Chordeiles minor*

Table A-5. Common Reptiles and Fishes Known or Expected to Occur in the Proposed Project Area

Common Name	Scientific Name
Western cottonmouth	*Agkistrdon piscivorus*
Water snake	*Nerodia spp.*
Western ribbon snake	*Thamnophis proximus*
Texas rat snake	*Elaphe obsoleta*
Ground skink	*Scincella lateralis*
Green anole	*Anolis carolinensis*
Gulf Coast toad	*Bufo vallicaps*
Eastern narrow-mouthed toad	*Gastrophryne carolinensis*
Southern leopard frog	*Rana sphenocephala*
Northern cricket frog	*Acris crepitans*
Bullfrog	*Rana catesbeiana*
Snapping turtle	*Chelydra serpentina*
Eastern mud turtle	*Kinostemon subrubrum*
American alligator	*Alligator mississippiensis*
Large mouth bass	*Micropterus salmoides*
Bluegill	*Lepomis macrochirus*
Channel catfish	*Ictalurus punctatus*
Flathead catfish	*Pylodictus olivarus*
Carp	*Cyprinus carpio*
Mosquito fish	*Gambusia affinis*
Topminnow	*Fundulus* spp.
Least killifish	*heterandria formosa*
Sailfin molly	*Poecilia latipinna*

APPENDIX B

CORRESPONDENCE

AOE

The Earth Technology Corporation®

4-7-91-174

275 West Hospitality Lane, Suite 200
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Telephone: (714) 381-3356 / Fax: (714) 885-8594

NO LISTED, proposed, or candidate
threatened or endangered species

Kym Mitchell
Endangered Species Coordinator
U.S. Fish and Wildlife Service
Lafayette, Louisiana

Date: 3-28-91

AF-0056-91-01541
11 March 1991

U.S. Department of the Interior
Fish and Wildlife Service
75 Spring Street, Room 1200
Atlanta, GA 30303

Subject: Request to Receive T&E Species Information

To Whom it May Concern:

This letter is to request the names of Federally listed, proposed, and candidate threatened and endangered species known to occur or potentially occurring on the Naval Air Station, New Orleans, Louisiana. A regional map showing the area is enclosed.

Please send any available information to:

The Earth Technology Corporation
275 West Hospitality Lane, Suite 200
San Bernardino, CA 92408

Thank you for your cooperation. If you have any questions, please call me.

Very truly yours,

THE EARTH TECHNOLOGY CORPORATION

Vincent J. Izzo

Vincent J. Izzo
Project Environmental Specialist

VJI/mml

S3.04-15.01541

MAR 18 1991

State of Louisiana

A. Kell McInnis III
Acting Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898
(504) 765-2800

Buddy Roemer
Governor

27 March 1991

Vincent J. Izzo
The Earth Technology Corporation
275 West Hospitality Lane, Suite 200
San Bernardino, CA 92408

RE: Threatened or endangered species assessment for the Naval Air Station, New Orleans, La.

Dear Mr. Izzo:

Personnel of the Natural Heritage Program have reviewed the captioned project. In reviewing our data base, no state-listed, proposed, or candidate threatened or endangered species were found within the project area.

The Louisiana Natural Heritage Program has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the location in question. They should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

Sincerely,

Gary Lester

Gary D. Lester, Coordinator
Louisiana Natural Heritage Program

GDL:bjk

cc: Ecological Studies, LDWF

APPENDIX C

NOISE METHODOLOGY

NOISE METHODOLOGY

C.1 Noise Environment Descriptor

The day-night average sound level (DNL) metric for describing the noise environment was used to produce the noise contours presented in this assessment (Acoustical Society of America, 1980). Efforts to provide a national uniform standard for noise assessment have resulted in adoption of DNL by the U.S. Environmental Protection Agency as the standard measure of noise for this procedure. It is the policy of numerous federal agencies, including the Department of Defense, Department of Housing and Urban Development, and the Federal Aviation Administration to asse[illegible]long-term cumulative exposure to aircraft noise in residential neighborh[illegible]n terms of DNL.

Use of the DNL descriptor is a method of assessing the amount of exposure to aircraft noise and predicting the percentage of residents in a well-populated community that are highly annoyed (% HA) by the various levels of exposure (Committee of Hearing, Bioacoustics, and Mechanics, 1977; Schultz, 1978). The DNL values used for planning purposes and for which contours are presented in this assessment are 60, 65, 70, 75, and 80 dB. Land use guidelines are based on the compatibility of various land uses with these exposure levels (U.S. Department of Transportation, 1980).

It is generally recognized that a noise environment descriptor should consider, in addition to the annoyance of a single event, the effect of repetition of such events and the time of day in which these events occur. Computation begins with a single-event energy descriptor and adds corrections for the number of events and the time of day. Since the primary noise impact relates to residential areas, nighttime events are considered more annoying than daytime events and are weighted 10 dB accordingly. The DNL values are computed by first logarithmically summing the single-event energy values for all of the flight operations in a typical 24-hour day (after adding the 10 dB penalty to all nighttime operation levels); then the average sound level is calculated for a 24-hour period.

As part of an extensive data collection process, detailed information is gathered on the flight tracks flown by each type of aircraft assigned to the base and the number and time of day of flights on each of these tracks during a typical day. This information is used in conjunction with the single-event noise descriptor to produce DNL values. These values are combined on an energy-summation basis to provide single DNL values for the mix of aircraft operations at the base. Equal value points are connected to form the contour lines.

C.2 Single-Event Noise Event Descriptor

The descriptor used to quantify a single event such as an aircraft flyover is the sound exposure level (SEL). The SEL measure is an integration of the A-weighted sound pressure level over the duration of a single event (such as an aircraft flyover), relative to a reference duration of 1 second. Frequency, magnitude, and duration vary according to aircraft type, engine type, and power setting. Therefore, individual aircraft noise data are collected for various types of aircraft/engines at different power settings and phases of flight. SEL versus slant range values are derived from noise measurements made according to a source noise data acquisition plan developed by Bolt Beranek and Newman, Inc. in conjunction with the Air Force Aerospace Medical Research Laboratory (AMRL) and carried out by AMRL (Bishop and Galloway, 1975). These standard-day, sea-level values form the basis for the individual-event noise descriptors at any location and are adjusted to the location by applying appropriate corrections for temperature, humidity, altitude, and variations from standard aircraft operating profiles and power settings.

Ground-to-ground sound propagation characteristics are used for ground runup activities. Air-to-ground propagation characteristics are used whenever the aircraft is airborne and the line-of-sight from observer to aircraft is 7 degrees or greater above horizontal; if the line-of-sight is 4 degrees or less, ground-to-ground propagation characteristics are used. Between these angles, propagation characteristics are interpolated.

In addition to use for assessing aircraft flight operations, the SEL metric can also be used to assess aircraft and engine runup noise emissions resulting from engine/aircraft maintenance checks on the ground. Sounds such as aircraft/engine ground runup noise are essentially constant in level during each test run at a given power setting. Data on the orientation of the noise source, type of aircraft or engine, number of test runs on a typical day, the power settings used and their duration, and use of suppression devices are collected for each ground runup test position. This information is processed along with mean sound pressure level (average-energy level) data to yield equivalent 1 second sound exposure levels, which are added (on an energy-summation basis) to the SEL levels generated by flight operations to produce DNL contours reflecting the overall noise environment produced by both air and ground operations of aircraft.

C.3 Noise Contour Production

Data describing flight tracks, flight profiles, power settings, flight paths and profile utilization, and ground runup information by type of aircraft/engine are assembled and processed for input into an IBM compatible personal computer. DNL contours are generated by the computer using the airfield-supplied operational data and the standard source-noise data corrected to

local conditions. The computer system plots these contours, which are provided in the text.

C.4 NOISEMAP Computer Program

The DNL methodology is implemented by use of the computer program NOISEMAP for military flight operations and civilian flight operations. NOISEMAP was initially developed in 1974 by the Air Force (Horonjeff et al., 1974) and utilizes a subsidiary code (OMEGA) to provide a file of military flight and ground maintenance operational data by aircraft type. The NOISEMAP code also contains Federal Aviation Administration-approved civilian aircraft operational data (Flythe, 1982). The current versions of this code (used for this study) are NOISEMAP 6.1, OMEGA 10.6, and OMEGA 11.2.

C.5 References

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